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(FILE 'HOME' ENTERED AT 07:20:40 ON 15 NOV 2002)
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L1 245424 S (DISEASE OR PATHOGEN? OR CONDITION OR SICKNESS)(4A)(DETECT? OR DETERMIN? OR ASSAY? OR ANALY? OR ASSES? OR TEST? OR MEASUR? OR MONITOR? OR ESTIMAT? OR EVALUAT? OR INVESTIGAT? OR CHARACTERI? OR DIAGNOS? OR SCREEN? OR SENSE# OR SENSING OR IDENTIF? OR PROFIL? OR PROBE# OR PROBING OR EXAMIN?)
L2 11512 S (DISEASE OR PATHOGEN? OR CONDITION OR SICKNESS)(4A)(PREDICT? OR QUANTITAT? OR QUANTIF?)
L3 37338 S L1-2 AND(PEPTIDE OR PROTEIN OR DIPEPTIDE OR TRIPEPTIDE)
L4 705 S L3 AND(MASS SPECTRO? OR MALDI OR ESI)
L5 2584 S L3 AND(CHROMATOG? OR REVERSE? PHASE OR HPLC OR LC)
L6 1846 S L4-5 NOT PY>1997
L7 630 S L6 AND(FLUID OR SERUM OR PLASMA OR BLOOD OR FILTRATE OR HEMOFILTRATE OR URINE OR SALIVA OR ASCITIC)
L8 21 S L4 AND(REVIEW AND MASS SPECTRO?)/ST
L9 146 S L7 AND(PEPTIDE OR DIPEPTIDE OR TRIPEPTIDE)
L10 149 S L7 AND(MW OR WEIGHT OR DALTON)
L11 23 S L7 AND SIZE EXCLU?
L12 21 S L6 NOT L7 AND PATENT/DT AND PY<1999
L13 289 S L8-11
L14 201 S L13 NOT(RADIOIM? OR SPERM OR ANTIBODY)
L15 88 S L13 NOT L14
L16 33 S L15 AND(18 OR PROFIL? OR VARIANT OR MAPPING OR ALZHEIM? OR(MASS SPECTRO? OR CHROMATOG? OR NORMAL)/TI,IT,ST)
L17 169 S L14 NOT(RECEPTOR OR INORGANIC OR SCINTI? OR IODIDE OR PHOTOAFFIN? OR IMMUNOREACT?)
L18 32 S L14 NOT L17
L19 14 S L18 AND(LEVEL OR RAISES OR SYMPTOMA? OR(CHROMATOG? OR MASS SPECTRO?)/TI,IT,ST)
FILE 'BIOSIS' ENTERED AT 08:41:46 ON 15 NOV 2002
L20 133 S L17
L21 48 S L16
L22 14 S L19
FILE 'CA' ENTERED AT 09:32:52 ON 15 NOV 2002
L23 24588 S DISORDER(4A)(DETECT? OR DETERMIN? OR ASSAY? OR ANALY? OR ASSES? OR TEST? OR MEASUR? OR MONITOR? OR ESTIMAT? OR EVALUAT? OR INVESTIGAT? OR CHARACTERI? OR DIAGNOS? OR SCREEN? OR SENSE# OR SENSING OR IDENTIF? OR PROFIL? OR PROBE# OR PROBING OR EXAMIN? OR PREDICT? OR QUANTITAT? OR QUANTIF?)
L24 16792 S L23 NOT L1-2
L25 327 S L1-2 AND POLYPEPTIDE NOT L3
L26 4193 S L24 AND(PEPTIDE OR PROTEIN OR DIPEPTIDE OR TRIPEPTIDE OR POLYPEPTIDE)
L27 323 S L25-26 AND(MASS SPECTRO? OR MALDI OR EST OR CHROMATOG? OR REVERSE# PHASE OR HPLC OR LC)
L28 178 S L27 NOT PY>1997
L29 14 S L27 NOT L28 AND PATENT/DT AND PY<1999
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L31 45 S L30 AND(PEPTIDE OR POLYPEPTIDE OR DIPEPTIDE OR TRIPEPTIDE OR MW OR WEIGHT OR DALTON OR SIZE EXCLU?)
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L32 28 S L31
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L33 190 S L17

L34 44 S L16
L35 14 S L19
L36 34 S L31
FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 10:20:22 ON 15 NOV 2002
L37 568 DUP REM L12 L16 L17 L19 L29 L31 L20 L21 L22 L32 L33 L34 L35 L36 (233 DUPLICATES REMOVED)

=> d l37 bib,ab 1-568

L37 ANSWER 6 OF 568 CA COPYRIGHT 2002 ACS
AN 135:355022 CA
TI Methods for determining isolated p27 **protein** levels and uses thereof
IN Roberts, James M.; Porter, Peggy L.; Polyak, Kornelia; Massague, Joan; Koff, Andrew
PA Memorial Sloan-Kettering Cancer Center, USA; Fred Hutchinson Cancer Research Center
SO U.S., 67 pp., Cont.-in-part of U.S. 5,688,665.
PI US 6316208 B1 20011113 US 1997-794002 19970203
US 5688665 A 19971118 US 1994-275983 19940715
PRAI US 1994-179045 B2 19940107
AB The subject invention is directed to the discovery of a **protein** involved in regulation of cell-cycle progression, and includes reagents and methods related thereto. A method for detg. the relative amt. of p27 **protein** in a cell or sample of cells (cell sample) comprises (i) detg. the level of a p27 **protein** having a specified sequence in the cell sample, and (ii) comparing the level of the p27 **protein** in the cell sample with the level of a wild-type p27 **protein** detd. for a control cell, wherein the wild-type p27 **protein** inhibits activation of a cyclin E-Cdk2 (cyclin-dependent kinase-2) complex and has a specified sequence. The level of p27 **protein** is detd. by **chromatog.** or electrophoresis. A reduced level of p27 (also called Kip1) correlates with the presence of hyperproliferative disorder and increased risk of recurrence of cancer.

L37 ANSWER 10 OF 568 CA COPYRIGHT 2002 ACS
AN 135:149285 CA
TI Applications of current MS techniques to **disease diagnostics**
AU Nakanishi, Toyofumi
CS Department of Clinical Pathology, Osaka Medical College, Takatsuki-shi, Osaka, 569-8686, Japan
SO Journal of the Mass Spectrometry Society of Japan (2001), 49(1), 26-29
LA Japanese
AB A review with 9 refs. We have been applied current MS techniques to detect and characterize aberrant **proteins** and to det. modified **proteins** from 1994. Two simple methods were devised to prep. **proteins** in these projects. One was immunopptn. with antisera against target **protein**, followed by LC-ESIMS and the other was 2- dimensional LC connected to ESIMS. Using these procedures, we detected more than 40 cases (10 different types) of transthyretins (TTRs), 5 cases (5 different types) of Cu/Zn superoxide dismutases and 60 cases (29 different types) of Hbs (Hbs) for 8 yr. TTR has several isoforms in serum, most of which are caused by disulfide linkage with cysteine residue at position 10. We found an ion peak 80 Da larger than unmodified TTR by MS, assigned it to S-sulfonated TTR and the modified TTR can be used as a diagnostic marker for molybdenum cofactor deficiency. We also measured glycated β-globin N-terminus hexapeptide (HbAlc) by immobilized endoproteinase Glu-C digestion and measured these digests by LC-ESIMS technique, proposed by Kobold et al. and calcd. the values of HbAlc by weighted sum of singly and doubly charged ions of these hexapeptides. Finally we describe identifications of Burkitt lymphoma BL60

cell line **proteins** catalogues by radical-free/high redn. two-dimensional gel electrophoretically sepn. and a high sensitive nanoflow- electrospray ion trap **mass spectrometry**.

L37 ANSWER 28 OF 568 CA COPYRIGHT 2002 ACS
AN 127:231383 CA
TI **ESI**/MS with ultrahigh sensitivity and its application to disease-related mutant **proteins**
AU Nakanishi, Toyofumi
CS Byotai Kensagaku, Osaka Ika Daigaku, Takatsuki, 569, Japan
SO Farumashia (1997), 33(9), 996-1000
AB A review with 11 refs. about ultrahigh-sensitivity electrospray ionization **mass spectrometry** (**ESI**/MS) for mol.-**wt**. detn. of giant **proteins** and its application to the anal. of abnormal Hbs and immunopptd. mutant **proteins** in body **fluids** for clin. diagnosis.

L37 ANSWER 41 OF 568 CA COPYRIGHT 2002 ACS
AN 127:156818 CA
TI Matrix-assisted laser desorption/ionization **mass spectrometry** guided purification of human guanylin from **blood** ultrafiltrate
AU Schrader, Michael; Juergens, Michael; Hess, Ruediger; Schulz-Knappe, Peter; Raida, Manfred; Forssmann, Wolf-Georg
CS Lower Saxony Institute for Peptide Research (IPF), Feodor-Lynen-Strasse 31, Hannover, D-30625, Germany
SO Journal of Chromatography, A (1997), 776(1), 139-145
AB The purifn. of the human **peptide** hormone guanylin 22-115 from **blood** ultrafiltrate (**hemofiltrate**, HF) was achieved using matrix-assisted laser desorption/ionization **mass spectrometry** (**MALDI**-MS) as the assay system. Screening a **peptide** bank generated from 5000 l HF guanylin 22-115 was detected by its mol. mass when adequate **conditions** for **MALDI**-MS **anal**. were chosen. The sensitivity was even better than of the established biol. assay system. In addn., the susceptibility towards solvents and salts is strongly reduced. 1.2 Mg of the **peptide** hormone was purified from 10% of the starting material.

L37 ANSWER 43 OF 568 CA COPYRIGHT 2002 ACS
AN 127:78007 CA
TI Biomolecules and **mass spectrometry**
AU Krishnamurthy, Thaiya; Ross, Philip L.; Goode, Michael T.; Menking, Debra L.; Rajamani, Uma; Heroux, Karen
CS Research and Technology Directorate, U. S. Army Edgewood RDandE Center, Aberdeen Proving Ground, MD, 21010-5423, USA
SO Journal of Natural Toxins (1997), 6(2), 121-162
AB A review and discussion with 23 refs. In recent years, state-of-the-art **mass spectrometric** (MS) and tandem **mass spectrometric** (MS/MS) techniques have contributed immensely towards the investigation of biopolymers. Characterization and anal. of toxic and biol. active mols., **pathogenic** and non-**pathogenic** organisms, **diagnosis** and treatment of **diseases**, **identification** and therapy for genetic disorders, biotechnol., bioremediation, and recognition as well as projection of potential threats to human health are some of the areas in which MS and MS/MS methodols. have been applied extensively. Electrospray (**ESI**), fast atom bombardment (FAB), and matrix-assisted laser desorption (**MALDI**) ionization methods in combination with MS and MS/MS techniques were applied to measure the mol. masses of **proteins** using femtomole quantities of the intact mols. Samples were introduced into the ionization source either directly or after liq. chromatog. (HPLC) or capillary zone electrophoretic (CZE) sepn. for measuring mol. masses. Simple chem. transformation, derivatization, and

enzymic degrdns. of a few nanomoles of the intact mols. followed by tandem **mass spectrometric** (MS/MS) anal. of the products resulted in deriving the total amino acid sequences of the intact mol. Location of the disulfide bonds could also be identified by a similar approach using 1-2 nmol of the **proteins**. Bacterial **pathogens** can be **detected** up to the strain level and distinguished from their non-pathogenic counterparts by the **MALDI**-MS anal. of either bacterial **proteins** or the intact whole cells. Distinction of closely related bacteria could thus be accomplished by **mass spectrometric** methods with ease, which was not possible earlier. Methods described in this report can easily be adopted for the detection, identification, and characterization of any proteinaceous toxins, antibodies, bacterial and viral pathogens. All of these investigations and analyses can be carried out cost-effectively as well as with great speed, selectivity, accuracy, and consistency.

L37 ANSWER 44 OF 568 CA COPYRIGHT 2002 ACS
AN 128:126682 CA
TI Assay of synovial **fluid** parameters: hyaluronan concentration as a potential marker for joint diseases
AU Praest, Barbara M.; Greiling, Helmut; Kock, Rudiger
CS Medical Faculty, Inst. Clinical Chemistry and Pathobiochemistry, Univ. Technology Aachen, Aachen, D-52057, Germany
SO Clinica Chimica Acta (1997), 266(2), 117-128
AB Synovial **fluids** from the knees of patients with degenerative joint disease, osteoarthritis, diabetic arthropathy, gout and acute inflammatory joint **disease** were **investigated** by high-performance **size-exclusion chromatog.** combined with multiangle laser light scattering detection and differential refractometry. These data were compared with the viscosities of the same sample measured by rotation viscometry with one low shear rate, as well as with C reactive **protein**. The median value of the **wt.**-av. mol. **wt.** of hyaluronan in synovial **fluids**, which differed less than the viscosity of these groups, varied between 1.09 × 106 g/mol (range 0.849-1.63 × 106 g/mol) (acute-inflammatory joint disease) and 1.91 × 106 g/mol (range 1.06-3.48 × 106 g/mol) (degenerative joint disease). The correlation between viscosity and hyaluronan concn. was much better than between viscosity and **wt.**-av. mol. **wt.** Changes in C reactive **protein** concn. were correlated with the disease activity. The concn. of hyaluronan was significantly higher in the cases of degenerative joint disease and diabetic arthropathy. These results suggest that synovial **fluid** concn. of hyaluronan is appropriate as a prognostic value in the evaluation of different kinds of joint diseases.

L37 ANSWER 45 OF 568 CA COPYRIGHT 2002 ACS
AN 127:304816 CA
TI The characterization of mutant **proteins** in body fluids by soft-ionization **mass spectrometry**
AU Nakanishi, Toyofumi; Kishikawa, Masahiko; Miyazaki, Ayako; Shimizu, Akira
CS Dep. Clin. Pathol., Osaka Med. Coll., Takatsuki, 569, Japan
SO Rinsho Kagaku (Nippon Rinsho Kagakkai) (1997), 26(3), 115-124
LA Japanese
AB A review with 15 refs. Progress in clinicopathol. research for hemoglobinopathies and neurodegenerative diseases have increased the need for simple and definite methods to detect and characterize mutant **proteins**, e.g., amyloid **protein**, Cu/Zn-binding superoxide dismutase (SOD-1), and prion **protein** assocd. with the diseases. The DNA anal. is a simpler current method for detection of mutations, however, it does not elucidate the post-genome informations such as the post-translational modification, **protein-protein** or -DNA interactions and the ratio of wild to mutant **proteins**, which are not available directly from the genome. The **mass**

spectrometry (MS) may offer a powerful tool for these post-genome anal. In 1994, we have established immunopptn. as a simple and reliable procedure for detecting mutant **protein** by **MALDI**-TOFMS and by HPLC-ESIMS. By this procedure, the isolation, concn., and desalting of the mutant **proteins** to be tested could be achieved simultaneously. Herein, we applied this technique for the detection of mutant **proteins** assocd. with diseases such as familial amyotrophic lateral sclerosis, familial amyloid polyneuropathy, and hemoglobinopathies and characterized some mutant **proteins** included new mutations by MS.

L37 ANSWER 52 OF 568 CA COPYRIGHT 2002 ACS
AN 127:274802 CA
TI Effect of different surfactants on the separation by micellar electrokinetic **chromatography** of a complex mixture of **dipeptides** in **urine** of prolidase-deficient patients
AU Grimm, R.; Zanaboni, G.; Viglio, S.; Dyne, K. M.; Cetta, G.; Iadarola, P.
CS Analytical Division, Hewlett-Packard, Waldbronn, D-76337, Germany
SO Journal of Chromatography, B: Biomedical Sciences and Applications (1997), 698(1 + 2), 47-57
AB Prolidase deficiency is a severe **disorder characterized** by massive excretion of metabolites with closely related structures. At present, micellar electrokinetic **chromatog.** is the sepn. method which provides the highest selectivity of structurally similar solutes. However, the structure of a surfactant can greatly affect the selectivity of sepn. depending on factors such as the length of hydrophobic alkyl chain or the nature of the hydrophilic group. Here we investigated the effect of 3 nonionic and 4 anionic detergents for obtaining the best sepn. conditions for resolving imido **dipeptide** mixts. The effect on resoln. of variables such as temp., surfactant concns., and org. solvents was also examd. The greatest resoln. was obtained at the lowest temp. studied (10°) by using 50 mM sodium borate, pH 9.3, contg. 50 mM pentanesulfonate and 10% methanol. Under these exptl. conditions, almost all excreted components were baseline sepd. and identified.

L37 ANSWER 57 OF 568 CA COPYRIGHT 2002 ACS
AN 126:303270 CA
TI Tryptophan analysis in **peptides** and **proteins**, mainly by liquid **chromatography**
AU Molnar-Perl, Ibolya
CS Institute of Inorganic and Analytical Chemistry, L. Eoetvoes University, P.O. Box 32, H-1518, Budapest, 112, Hung.
SO Journal of Chromatography, A (1997), 763(1-2), 1-10
AB A review with 84 refs. Some of the general problems known in the anal. of tryptophan (both in its free form, alone or together with its metabolites, as well as in hydrolyzates of **peptides** or **proteins**, alone or together with all other amino acids) are described. This review includes an exhaustive literature overview using the author's experience with the prepn. of derivs. and with various **conditions** arising from the **anal.** procedure itself. The special requirements of various tryptophan contg. matrixes (biol. tissues or **fluids**, food and feed stuffs, etc.) are also taken into account. For the sake of completeness, in addn. to the most common **HPLC** techniques, GC and spectrophotometry (in selected cases very important procedures), are also discussed.

L37 ANSWER 63 OF 568 CA COPYRIGHT 2002 ACS
AN 124:255247 CA
TI Human circulating β-defensin hBD-1
IN Bensch, Klaus W.; Forssmann, Wolf-Georg; Schulz-Knappe, Peter

PA Germany
SO Ger. Offen., 13 pp.
PI DE 4427531 A1 19960208 DE 1994-4427531 19940804
AB An antibiotic **peptide**, hBD-1, is isolated from human **hemofiltrate** and a cDNA is provided for prodn. of recombinant hBD-1 for diagnosis and treatment of disturbances in inflammatory and immune processes. Thus, hBD-1, with 36 amino acid residues, was purified from human **hemofiltrate** by (NH4)2SO4 pptn., ultrafiltration, and **chromatog.** and sequenced. Degenerate PCR primers based on this sequence were synthesized and used to amplify hBD-1 cDNA from various human tissues; the cDNA was also sequenced.

L37 ANSWER 64 OF 568 CA COPYRIGHT 2002 ACS
AN 126:130138 CA
TI The **profile** of soluble amyloid β **protein** in cultured cell media. Detection and quantification of amyloid β **protein** and **variants** by immunoprecipitation-**mass spectrometry**
AU Wang, Rong; Sweeney, David; Gandy, Samuel E.; Sisodia, Sangram S.
CS Lab. Mass Spectrometry, Rockefeller Univ., New York, NY, 10021, USA
SO Journal of Biological Chemistry (1996), 271(50), 31894-31902
AB To study the metab. of amyloid β **protein** (Aβ) in **Alzheimer**'s disease, the authors have developed a new approach for analyzing the **profile** of sol. Aβ and its **variants**. In the present method, Aβ and its **variants** are immunoisolated with Aβ-specific monoclonal antibodies. The identities of the Aβ **variants** are detd. by measuring their mol. masses using matrix-assisted laser desorption ionization time-of-flight **mass spectrometry**. The levels of Aβ **variants** are detd. by their relative peak intensities in **mass spectrometric** measurements by comparison with internal stds. of known identities and concns. The authors used this method to examine the Aβ species in conditioned media of mouse neuroblastoma cells transfected with cDNAs encoding wild type or mutant human amyloid precursor **protein**. In addn. to human Aβ-(1-40) and Aβ-(1-42), more than 40 different human Aβ **variants** were identified. Endogenous murine Aβ and its **variants** were also identified by this approach. The present approach is a new and sensitive method to characterize the **profile** of sol. Aβ in conditioned media and biol. **fluids**. Furthermore, it allows direct measurement of each individual **peptide** in a **peptide** mixt. and provides comprehensive information on the identity and concn. of Aβ and Aβ **variants**.

L37 ANSWER 68 OF 568 CA COPYRIGHT 2002 ACS
AN 125:133581 CA
TI A proteolytic fragment of insulin-like growth factor (IGF) binding **protein**-3 that fails to bind IGFs inhibits the mitogenic effects of IGF-I and insulin
AU Lalou, Claude; Lassarre, Claudine; Binoux, Michel
CS Unite Recherches Regulation Croissance, Inst. Natl. Sante Recherche Medicale Unite 142, Paris, 75571, Fr.
SO Endocrinology (1996), 137(8), 3206-3212
AB Limited proteolysis of insulin-like growth factor binding **protein**-3 (IGFBP-3) is increasingly becoming recognized as an essential mechanism in the regulation of insulin-like growth factor (IGF) bioavailability, both in the bloodstream and at cellular **level**. Plasmin generated on contact with various cell types provokes proteolytic cleavages that are similar to those induced in vivo by (as yet unidentified) IGFBP-3 proteases. Exptl. **conditions** were **detd.** to achieve plasmin-induced limited proteolysis of recombinant human nonglycosylated IGFBP-3. Two major fragments of 22/25 kDa (kDa) and one of 16 kDa were identified by Western immunoblotting and isolated by **reverse-phase chromatog.** The 22/25-kDa fragments correspond to the major ≈30-kDa glycosylated fragment of IGFBP-3 in **serum** and the 16-kDa

fragment, to one of the same size, that is nonglycosylated. Western ligand blot anal., affinity crosslinking, and competitive binding expts. using radiolabeled IGF and unlabeled IGF-I or -II showed that in the high performance liq. **chromatog**. eluate contg. the 16-kDa fragment, all affinity for IGFs had been lost, whereas the affinity of the 22/25-kDa fragments was considerably reduced. Scatchard anal. of the data indicated a 20-fold loss of affinity for IGF-II and an 50-fold loss for IGF-I compared with that of recombinant human IGFBP-3. In a chick embryo fibroblast assay in which DNA synthesis was stimulated both by IGF-I and by insulin (at 100-fold concns., so that interaction with the Type 1 IGF receptor would occur), IGFBP-3 was found to inhibit IGF-I-induced stimulation almost totally. It had no effect on stimulation by insulin, which has no affinity for the IGFBPs. With the 22/25-kDa fragments, barely 50% inhibition of IGF-I stimulation was achieved and no inhibition of insulin stimulation. Unexpectedly, with the fraction contg. the 16-kDa fragment (despite the total lack of affinity for IGF-I), IGF-I-induced stimulation was inhibited to nearly the same extent as with intact IGFBP-3. In addn., insulin-induced stimulation was inhibited with similar potency. IGFBP-3 proteolysis therefore generates two types of fragment with different activities. One has weak affinity for IGF-I and is only a weak antagonist of IGF action. The other lacks affinity for the IGFs, but nevertheless inhibits IGF-stimulated mitogenesis, thus acting by a mechanism that is independent of the IGFs.

L37 ANSWER 69 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:367021 BIOSIS
TI Autoreactive cytotoxic T lymphocytes in human immunodeficiency virus type 1-infected subjects.
AU Veronese, Fulvia Di Marzo; Arnott, David; Barnaba, Vincenzo; Loftus, Douglas J.; Sakaguchi, Kazuyasu; Thompson, Cynthia Boyer; Salemi, Simonetta; Mastroianni, Claudio; Sette, Alessandro; Shabanowitz, Jeffrey; Hunt, Donald F.; Appella, Ettore (1)
CS (1) Lab. Cell Biol., Natl. Cancer Inst., National Inst. Health, Bethesda, MD 20892 USA
SO Journal of Experimental Medicine, (1996) Vol. 183, No. 6, pp. 2509-2516.
AB A subtractive analysis of **peptides** eluted from major histocompatibility complex (MHC) class I human histocompatibility leukocyte antigen (HLA)-A2.1 molecules purified from either human immunodeficiency virus type-1 (HIV-1)-infected or uninfected cells was performed using micro high-performance liquid **chromatography** and **mass spectrometry**. Three **peptides** unique to infected cells were identified and found to derive from a single **protein**, human vinculin, a structural **protein** not known to be involved in viral **pathogenesis**. Molecular and cytofluorometric **analyses** revealed vinculin mRNA and vinculin **protein** overexpression in B and T lymphocytes from HIV-1-infected individuals. Vinculin **peptide**-specific CTL activity was readily elicited from peripheral **blood** lymphocytes of the majority of HLA-A2.1+, HIV+ patients tested. Our observations suggest that atypical vinculin expression and MHC class 1-mediated presentation of vinculin-derived **peptides** accompany HIV infection of lymphoid cells in vivo, with a resultant induction of antivinculin CTL in a significant portion of HIV+ (HLA-A2.1+) individuals.

L37 ANSWER 81 OF 568 CA COPYRIGHT 2002 ACS
AN 127:62625 CA
TI Detection of pathological changes of **proteins** by **peptide mapping** after **protein** digestion by use of oriented immobilized proteinases
AU Turkova, Jaroslava; Kucerova, Zdenka; Benes, Milan J.
CS Inst. Organic Chem. and Biochem., Prague, 166 10, Czech Rep.
SO Journal of Molecular Recognition (1996), 9(5/6), 360-363

AB A review with refs. **Diagnostic** methods for **detecting** gastric **diseases** using chymotryptic digestion of pepsin are discussed. **Peptide** maps can be prepd. using **reversed-phase** high-performance liq. **chromatog.** Batchwise **chromatog.** by use of membranes with immobilized Tyr(I2) was used for the isolation of pepsin from gastric mucosa ext. or from human **blood serum.** Enzymes immobilized using suitable antibodies or through their sugar moieties can be used for ther prepn. of **peptide** maps because such enzymes share good steric accessibility to their active binding sites and possess increased thermal stability. Biospecific adsorption of **proteins** to immunosorbents combines the simultaneous isolation of these enzymes with their oriented immobilization. **Proteins** were stabilized by hydrophilization through the attachment of saccharide residues contg. galactose residues. These residues could be activated by oxidn. using galactose oxidase and subsequently immobilized to hydrazide-contg. solid supports.

L37 ANSWER 86 OF 568 MEDLINE
AN 96223783 MEDLINE
TI Purification and characterization of a novel human 15 kd cholesterol crystallization inhibitor **protein** in bile.
AU Secknus R; Yamashita G; Ginanni Corradini S; Chernosky A; Williams C; Hays L; Secknus M A; Holzbach R T
CS Department of Gastroenterology, Cleveland Clinic Foundation, OH 44195-5218, USA.
SO JOURNAL OF LABORATORY AND CLINICAL MEDICINE, (1996 Feb) 127 (2) 169-78.
AB Crystallization-inhibiting **proteins** can explain longer nucleation times associated with bile from gallstone-free subjects as compared with bile from patients with cholesterol gallstones. We partially characterized and examined the crystallization inhibitory potency of a newly purified 15 kd human biliary **protein.** Gallbladder bile was passed through an anti-apolipoprotein A-I (apo A-I) immunoaffinity column to extract lipid-associated **proteins.** The bound fraction was separated by 30 kd ultrafiltration. Sodium dodecyl sulfate-polyacrylamide gel electrophesis (SDS-PAGE) was performed under nonreducing and reducing **conditions.** Cholesterol crystallization activity was **tested** in a photometric cholesterol crystal growth assay. Isoelectric focusing was performed by using a standard gel. The purified 15 kd **protein** was subjected to N-terminal amino acid sequencing. Although the whole apo A-I-bound fraction contained a variety of **proteins** and lipids, its 30 kd **filtrate** yielded a nearly pure 15 kd **protein** with only minor contamination from apo A-1. Amino acid sequencing showed that the **protein** was unique. Enzymatic deglycosylation revealed no evidence for glycosylation. At a **protein** concentration of 10 micrograms/ml, crystallization time was delayed as compared with control and apo A-I, and final crystal mass was reduced to 75% of control. Its isoelectric point was 6.1 without isoforms. Under nonreducing conditions, the **protein** formed a 30 kd dimer and a 60 kd tetramer. We conclude that this **protein** is a novel potent biliary crystallization inhibitor **protein.**

L37 ANSWER 88 OF 568 CA COPYRIGHT 2002 ACS
AN 130:135016 CA
TI Microcystin
AU Kondo, Fumio
CS Department of Biology, Aichi Prefectural Hygiene Laboratory, Japan
SO LC/MS no Jissai (1996), 122-138. Editor(s): Harada, Ken'ichi; Oka, Hisao. Publisher: Kodansha, Tokyo, Japan.
LA Japanese
AB A review and discussion with 19 refs. on the application of Frit-FAB LC/MS

to the sepn. and identification of the hepatotoxic cyclic **peptides** called microcystins. Optimization of HPLC **conditions**, column selection, and **detn.** of microcystins in water are discussed. The application of.

L37 ANSWER 89 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:263251 BIOSIS
TI Elevated **levels** of corticotrophin-releasing factor binding **protein** in the **blood** of patients suffering from arthritis and septicaemia and the presence of novel ligands in synovial **fluid**.
AU Woods, R. J.; David, J.; Baigent, S.; Gibbins, J.; Lowry, P. J. (1)
CS (1) Sch. Anim. and Microbial Sci., Univ. Reading, Reading, Berks RG6 6AJ UK
SO British Journal of Rheumatology, (1996) Vol. 35, No. 2, pp. 120-124.
AB In view of the reported inflammatory effects of corticotrophin-releasing factor (CRF) and the associated regulatory elements in the gene of its binding **protein** (BP), we postulate that both BP as well as novel BP-ligands other than CRF may be involved in inflammatory **disease**. We have **investigated** BP in the **blood** of patients with arthritis and septicaemia, and have attempted to identify CRF and other BP-ligands in synovial **fluid**. The BP was found to be significantly elevated in the **blood** of patients with rheumatoid arthritis and septicaemia. There was less BP-ligand and CRF in synovial **fluid** from patients with rheumatoid arthritis than from those with osteo- or psoriatic arthritis. There was at least 10-fold more BP-ligand than CRF in the **fluid** of all three groups of patients. A small amount of immunoreactive human (h)CRF, eluting in the expected position of CRF-41, was detected after high-pressure liquid **chromatography** of arthritic synovial **fluid**; however, the bulk of material with BP-ligand binding activity eluted earlier, suggesting that synovial **fluid** contained novel **peptides** that interacted with the BP. These results would suggest that the BP and its ligands could play an endocrine immunomodulatory role in inflammatory disease.

L37 ANSWER 96 OF 568 CA COPYRIGHT 2002 ACS
AN 122:155762 CA
TI Method of sample preparation for **urine protein** analysis with capillary electrophoresis
IN Liu, Cheng-Ming; Wang, Hann-Ping
PA Beckman Instruments, Inc., USA
SO PCT Int. Appl., 40 pp.
PI WO 9502182 A1 19950119 WO 1994-US5631 19940518
PRAI US 1993-91844 19930709
AB Processes are provided for pretreating body **fluid** (e.g., **urine**) compns. and subsequently analyzing the pretreated body **fluid** compns. for analytes of interest esp. in clin. **disease diagnosis**. Processes for pretreating the compns. include providing a **size exclusion** gel having a mol. **wt.** fractionation range or a mol. **wt.** exclusion such that the **size exclusion** gel is capable of excluding or fractionating the analytes of interest and then causing the compn. to contact the **size exclusion** gel to sep. the analytes from low-mol.-**wt.** compn. components which interfere with the sepn. and anal. of the analytes of interest. Processes for analyzing pretreated compns. include electrophoretic methods such as capillary zone electrophoresis which involve the sepn. and detection of analytes of interest. Examples are given of the detn. of **proteins** in the **urine** of patients with myeloma and kidney disease.

L37 ANSWER 102 OF 568 CA COPYRIGHT 2002 ACS
AN 123:164410 CA
TI Analysis of **serum protein** precipitated with antiserum by matrix-assisted laser desorption ionization/time-of-flight and electrospray ionization **mass**

spectrometry as a clinical laboratory test
AU Nakanishi, Toyofumi; Shimizu, Akira; Okamoto, Nobuhiko; Ingendoh, Arnd; Kanai, Michiko
CS Dep. Clin. Pathol., Osaka Med. Coll., Osaka, 569, Japan
SO Journal of the American Society for Mass Spectrometry (1995), 6(9), 854-9
AB **Serum** transferrin pptd. with specific antisera was analyzed by matrix-assisted laser desorption ionization/time-of-flight **mass spectrometry** (**MALDI**/TOF-MS) and electrospray ionization-**mass spectrometry** (ESI-MS). When analyzed by **MALDI**, transferrin showed signal peaks that clearly could be sepd. from ions of IgG present in the immunoppt. By ESI-MS, when the immunoppts. were loaded through a microcapillary polymeric **reversed-phase** column connected to the electrospray ionization probe, the mass spectra of transferrin were obsd. with a high signal-to-noise ratio and good resoln. By **MALDI**/TOF-MS, the obsd. mol. **wt**. of normal transferrin was ~1.2 ku smaller when analyzed in the reflectron mode than in the linear mode. The obsd. mol. **wt**. of transferrin treated with sialidase was approx. the same in both modes. A comparison between the results obtained in both modes may help to **est**. the no. of sialic acids on the **protein** mol. A transferrin isoform with a mol. **wt**. of ~2.2 ku less than the normal species was identified in the **serum** of patients with a carbohydrate-deficient glycoprotein syndrome as well as in heavy alc. consumers.

L37 ANSWER 103 OF 568 MEDLINE
AN 96362019 MEDLINE
TI The identification of an 18,000-molecular-**weight** antigen specific to big liver and spleen disease.
AU McAlinden V A; Douglas A J; McNeilly F; Todd D
CS Department of Agriculture for Northern Ireland, Veterinary Sciences Division, Belfast.
SO AVIAN DISEASES, (1995 Oct-Dec) 39 (4) 788-95.
AB Big liver and spleen (BLS) disease is an infectious syndrome of broiler breeders that has been serologically diagnosed worldwide with the agar gel immunodiffusion test. Liver homogenate from an affected broiler breeder was used as the antigen source in this study. This paper reports the identification, from liver, of a soluble basic **protein** antigen (molecular **weight** 18,000) that is specific to BLS disease. The antigen was partially purified from soluble extract of liver using a two-step fractionation procedure comprising Sephacryl S200 gel filtration and carboxymethyl (CM) cellulose cation exchange. After cation exchange, the partially purified (CM) antigen contained approximately 12 **proteins**. Immunoblotting was used to **identify** the single BLS **disease**-specific antigen. In addition, a polyclonal rabbit antiserum raised to the CM antigen was found to be monospecific to the 18,000-molecular-**weight** antigen by immunoblotting on the CM antigen. This **serum** was also of use in specifically **detecting** intracellular BLS **disease** antigen in frozen cryostat sections by indirect immunofluorescence.

L37 ANSWER 107 OF 568 MEDLINE
AN 96007603 MEDLINE
TI Antiprotease activity in **urine** of patients with inflammatory skin disorders.
AU Streit V; Wiedow O; Bartels J; Christophers E
CS Department of Dermatology, University of Kiel, Germany.
SO JOURNAL OF INVESTIGATIVE DERMATOLOGY, (1995 Oct) 105 (4) 562-6.
AB Polymorphonuclear leukocytes contain well-defined proteolytic enzymes in their azurophilic granules that can be released into tissues during inflammation, producing a localized excess of proteases that causes a protease-antiprotease imbalance with subsequent tissue destruction. The

antiproteolytic compounds of the epidermis, such as the protease inhibitors elafin and antileukoprotease, are thought to counteract the proteolytic tissue damage. We investigated the **urine** of patients suffering from inflammatory skin conditions (e.g., erysipelas, psoriasis) for the presence of urinary antiprotease activities. Purification of elastase-inhibitory activities from pooled **urine** samples by cation exchange high-performance liquid **chromatography** and preparative and analytical **reverse-phase** high-performance liquid **chromatography** yielded two different types of inhibitors. One was a cationic, acid-stable, and elastase-specific inhibitor of M(r) 6,000 by **size-exclusion** high-performance liquid **chromatography**. N-terminal amino acid sequence analysis of the first 28 residues showed identity with elafin, an elastase-specific inhibitor recently isolated from psoriatic scales. The second anti-protease activity was due to two forms of urinary bikunin, the inhibitory subunit of inter-alpha-inhibitor. Both bikunin fragments, with M(r) 4,000 and 16,000, were identified by N-terminal amino acid sequence analysis of the first 10 residues and were characterized by an antiproteolytic profile against human leukocyte elastase, cathepsin G, and trypsin. Urinary protease inhibitors may serve as **diagnostic** markers of inflammatory **diseases**.

L37 ANSWER 111 OF 568 CA COPYRIGHT 2002 ACS
AN 123:6708 CA
TI **Mass spectrometry** of **protein**. Application for specific **protein** of Alzheimer disease
AU Takio, Koji
CS Inst. Phys. Chem. Res., Wako, 351-01, Japan
SO Farumashia (1995), 31(5), 482-7
LA Japanese
AB A review with 13 refs., on the **anal**. of Alzheimer's **diseases**-specific **proteins**, amyloid β/A4 **proteins** and tau **proteins** in paired helical filaments, by **mass spectrometry**.

L37 ANSWER 113 OF 568 MEDLINE
AN 96259265 MEDLINE
TI TNF inhibitor with a low molecular **weight** found in the human **sera**.
AU Shimoda A; Hanaumi K; Kumagai K
CS Immunological Research Section of Clinical Laboratory, Sendai Shakaihoken Hospital.
SO TOHOKU JOURNAL OF EXPERIMENTAL MEDICINE, (1995 Dec) 177 (4) 327-35.
AB We found a TNF inhibitory factor with a molecular **weight** of 5 to 10 kDa in the human **sera**. The activity was detected by inhibiting the activity of **serum** to TNF-induced cytotoxicity against target cells. It was found in **sera** of all the healthy donors **tested** without any febrile **diseases**. Moreover, our results demonstrated that TNF inhibitory factor decreases in the semum of patients on regular hemodialysis treatment and in the **serum** of diabetes mellitus patients. The activity found in human **sera** was eluted from DEAE-cellulose column (Mono Q) at 0.25 and 0.45 M NaCl, and was labile to incubation for 60 min at 56 degrees C and susceptible to treatment with trypsin, which destroyed 60% of its biological activity. TNF inhibitory factor may act as a regulator of the biological activity of TNF and could have beneficial effects in certain inflammatory conditions, and therefore, could be useful in clinical application.

L37 ANSWER 116 OF 568 CA COPYRIGHT 2002 ACS
AN 123:1875 CA
TI Characterization of immunoreactive adrenomedullin in human **plasma** and **urine**
AU Sato, Kyoko; Hirata, Yukio; Imai, Taihei; Iwashina, Masatora; Marumo, Fumiaki

CS Second Dep. Internal Medicine, Tokyo Medical Dental University, Tokyo, 113, Japan
SO Life Sciences (1995), 57(2), 189-94
AB Adrenomedullin(AM) is a novel vasodilator **peptide** recently isolated from pheochromocytoma. By using a specific and sensitive RIA for human AM, the authors have characterized immunoreactive AM in human **plasma** and **urine**. Patients with chronic renal failure had about five-fold higher **plasma** immunoreactive AM **levels** than normal subjects, which did not change before and after hemodialysis. Immunoreactive AM was present in normal human **urine**, whose concns. were about six-fold greater than those in human **plasma**. **Reverse-phase HPLC** of human **plasma** and **urine** revealed that immunoreactive AM emerged as a single peak at a position identical to that of authentic human AM(1-52). These data suggest that circulating AM is cleared by the kidney and urinary excretion of AM may be derived from glomerular filtration and/or its renal prodn.

L37 ANSWER 118 OF 568 CA COPYRIGHT 2002 ACS
AN 124:199954 CA
TI The in vitro activity of two urinary **polypeptides** with respect to G- and GM-CSF and IL3 activity on the peripheral CFU of normal and leukemic subjects.
AU Notario, A.; Mazzucchelli, I.; Rolandi, M. L.; Fossati, G.
CS IRCCS, University of Pavia, Pavia, 27100, Italy
SO International Journal of Immunopathology and Pharmacology (1995), 8(3), 173-84
AB The authors isolated 2 **polypeptides** on **HPLC** from the acetone ppt. of the **urine** of normal subjects and of patients with untreated AML, APL, and AMML. Before sepn. the quantity of the total urinary factor from leukemic patients was 50 mg/24 h and from normal subjects was 10 mg. The authors tested the total **polypeptide** ext. and the 2 main fractions obtained on liq. cultures of the peripheral CFU of normal and leukemic subjects (AML, APL, CML, and CMML). Colony growth, cell morphol. changes, and the main cellular markers were examd. at the beginning and at 5 and 10 days of incubation in RPMI 1640 medium. **Testing conditions** were basal and as **detd.** by the addn. of the polypeptidic fractions, both alone and in assocn. with trans-retinoic acid or thioproline. Simultaneously and under the same exptl. **conditions**, the authors **tested** the activity of G- and GM-CSF and IL3. The results obtained prove the colony stimulating activity of the two fractions and of crude ext.; they also prove the ability of such agents to modify the behavior in vitro of peripheral CFU. The urinary exts. are also able to stimulate a moderate differentiation of the elements and an increase both in fibroblasts and in adhesion mols. Thus, the dosage of growth factors in **urine** may be useful as important marker in several hemopoietic pathol. conditions or as a possible source of growth factors.

L37 ANSWER 119 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1995:503427 BIOSIS
TI Purification and analysis of plasmatic components of middle molecular **weight** in patients with uremic syndrome.
AU Mateo, M. C. Martin (1); Lobato, O. L. Cuevas; Bustamante, J.
CS (1) Dep. de Bioqumica, Biol. Mol. Fisiol., Fac. de Ciencias, Univ., de Valladolid, Paseo del Prado de La Magdalena, s/n E-47005 Valladolid Spain
SO Nephron, (1995) Vol. 71, No. 2, pp. 160-167.
AB Many hormonal, metabolic and enzymatic alterations have been described in patients with chronic renal failure (CRF) after prolonged hemodialysis treatment. This toxicity has been associated with the accumulation of middle molecular **weight** components, called 'middle molecules', in their **blood**. To investigate the chemical nature of these molecules, 20 CRF

patients were studied and compared with 10 control subjects. **Sera** from these individuals were treated with molecular exclusion **chromatography**, the components of high molecular **weight** were eliminated from the elution peaks, and the remainder was then concentrated by lyophilization. The zones of greatest concentration were fractioned by ionic exchange **chromatography** and by **HPLC** in **reverse phase**. Infrared spectroscopy was also performed on the most relevant zones, as well as SDS/PAGE. Finally, the amino acid sequence of a peak presenting the best **conditions** was **analyzed**. The results indicate that the majority of the compounds isolated are **peptides**, amino acids or amino alcohols, and that many of these 'middle molecules' are joined to trace metals.

L37 ANSWER 120 OF 568 MEDLINE
AN 96130617 MEDLINE
TI Monitoring lung cancer with tissue polypeptide antigen: an ancillary, profitable **serum** test to **evaluate** treatment response and posttreatment **disease** status.
AU Buccheri G; Ferrigno D
CS Department of Respiratory Medicine, A. Carle Hospital, Cuneo, Italy.
SO LUNG CANCER, (1995 Oct) 13 (2) 155-68.
AB The tissue polypeptide antigen (TPA) is a **protein** produced and released by proliferating cells that possesses several characteristics for an ideal tumor marker. Our purpose was to define the clinical yield of TPA in the follow-up of patients with lung cancer (**LC**). Three hundred and forty-one new **LC** patients underwent an extensive pre-treatment staging evaluation (UICC 1987 classification) and a TPA **serum** measurement. We restaged them at regular times by: 1, clinical history and physical examination, routine lab tests, chest X-rays, and any other examination as suggested by the prior baseline evaluation, and 2, the **serum** level of TPA. We evaluated a total of 1513 assays (including 1172 posttreatment measurements). Individual values of TPA correlated significantly with treatment response and disease status. Patients with small-cell lung cancer showed the lowest correlation indexes between clinical parameters and the marker. Each objective response to treatment or disease progression was almost always associated to consistent changes of TPA ($P < 0.0001$, by the Wilcoxon's test). A 50% reduction under the prior TPA value was 30% sensitive, 90% specific, and 88% accurate in the diagnosis of response to treatment. The same percent reduction was 18% sensitive, 92% specific, and 88% accurate in predicting a future response. A 100% increase over the prior level of TPA permitted to recognize tumor relapses with sensitivity, specificity, and accuracy of 30%, 93%, and 80% (diagnosis of progression), and 18%, 92%, and 78% (prediction of progression). Similar diagnostic yields were observed using progressively increasing or progressively decreasing changes of the marker level. In lung cancer, the diagnosis (and even the anticipation) of disease status is often possible using appropriate threshold value of TPA.

L37 ANSWER 121 OF 568 CA COPYRIGHT 2002 ACS
AN 123:28672 CA
TI Biomedical and biochemical applications of liquid chromatography-**mass spectrometry**
AU Gelpi, Emilio
CS Department of Medical Bioanalysis, CID-CSIC, J. Girona 18-26, Barcelona, 08034, Spain
SO Journal of Chromatography, A (1995), 703(1 + 2), 59-80
AB This review with 95 refs. centers on the application of various LC-MS and LC-MS-MS techniques to the study and soln. of practical problems in biomedical research. For this purpose it covers a selection of publications in this area included in the MEDLINE database for the period

1991-mid-1994. As shown herein, LC-MS is increasingly gaining in importance in the biomedical field, esp. after the revolution brought about by the introduction of the new liq.-phase atm. pressure ionization (API) techniques, such as electrospray (ES) and ionspray. The information in this database shows that thermospray (TS), which clearly dominated LC-MS coupling in the 1980s, is on a downward trend relative to the more modern API techniques which will certainly dominate this application field in the present decade. Studies on drug metab., therapeutic drug monitoring and pharmacol. have been traditionally carried out by GC-MS. However, LC-MS has lately been replacing classical GC-MS techniques in many of these applications. For instance, LC-ES-MS has greatly facilitated the application of both qual. and quant. LC-MS methods to highly polar mols. This is possible without the need to resort to elaborate sample handling and derivatization procedures for relatively high-mol.-mass compds. such as drug conjugates, biosynthetic and natural **peptides** and therapeutic **proteins** obtained by recombinant DNA technol., all of them formerly totally inaccessible to the std. GC-MS or LC-MS methods. With regard to studies on metab. and biochem. phenomena of endogenous compds., LC-ES-MS is also becoming very strong in the anal. of structural biopolymers such as **peptides**, **proteins**, glycoproteins and glycolipids, and also lower mol. mass compds. such as fatty acids, vitamins, steroids and nucleic acids. For example, structural verification of post-translational modifications in **proteins** can be efficiently obtained in the time frame of an LC run and suitable MS methods for the location of glycopeptide-contg. fractions in proteolytic digests of glycoproteins have been developed. Interesting examples are also shown of the use of LC-MS in clin. studies and the **detn.** of biol. markers of **disease**.

L37 ANSWER 132 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1995:159128 BIOSIS
DN PREV199598173428
TI **Serum** markers CASA, CEA, CYFRA 21-1, MSA, NSE, TPA and TPS in lung cancer.
AU Devine, Peter L. (1); Yarker, Jenny Y.; Fong, Kwun M.; McGuckin, Michael A.; Scells, Betty; Ward, Bruce G.; Thynne, Grenville S.; Zimmerman, Paul V.
CS (1) Dep. Obstet. Gynaecol., Univ. Queensland, Clin. Sci. Build., Royal Brisbane Hosp., Herston 4029, Queensland Australia
SO International Journal of Oncology, (1994) Vol. 4, No. 5, pp. 1129-1135.
AB **Serum** CASA, CEA, CYFRA 21-1, NSE, MSA, TPA, and TPS were determined in patients with lung cancer (**LC**), benign lung disease (BL), and healthy control (HC) donors. Using predefined cutpoints, the cytokeratin-related markers TPA, TPS, and CYFRA showed the highest sensitivity in non-small cell lung cancer (TPA 69%, TPS 63%, CYFRA 54%), while NSE gave the highest sensitivity in small cell lung cancer (50%), indicating that these markers may be most appropriate in **monitoring** the course of **disease** and the patients response to therapy. Receiver-operator analysis was performed to compare assays at the same specificity. At high specificities (gtoreq 95%), CYFRA was significantly better than all assays except CASA in the **LC** vs. HC and **LC** vs. non-infectious BL comparisons (p lt 0.05), while CEA was the only assay which was not significantly different to CYFRA in the **LC** vs. BL comparison. CASA was of particular value when used in combination with these markers, as the sensitivity was increased. In addition, pretreatment CASA was the best indicator of patient survival (one year survival of 83% for patients with CASA lt 5 units/ml and 10% for patients with CASA gt 5 units/ml).

L37 ANSWER 146 OF 568 CA COPYRIGHT 2002 ACS
AN 122:75867 CA
TI The rapid detection of molecular **weight variant proteins** by MALD/TOF and

ESI-MS and its application as a clinical laboratory test
AU Nakanishi, Toyofumi; Shimizu, Akira
CS Department of Clinical Pathology, Osaka Medical College, Japan
SO Nippon Iyo Masu Supekutoru Gakkai Koenshu (1994), 19, 177-83
AB The authors previously reported a simple method for detection of **variant** transferrin with **protein**-antibody mixt. prepd. by immunopptn. using MALD/TOF-MS anal. (1994). Here, **serum** transferrin pptd. with anti-transferrin **serum** was analyzed by **ESI**-MS. The transferrin-antibody complex was sepd. into transferrin and IgG under the **conditions** of MALD/TOF-MS **anal.**, and ions of both mols. were not superimposed. However, multivalent ions of both mols. were superimposed by **ESI**-MS using an infusion sample-loading method. The authors loaded samples through a microcapillary PLRP-S column connected to an **ESI** probe. Transferrin was sepd. from IgG and other components on the column, and ion peaks of pure transferrin were obtained. Generally, better resoln. can be expected by loading samples through the microcapillary column than by the infusion method, probably because of the desalination effect of the polymeric **reversed-phase** column. The transferrin isoform with a mol. **wt.** of ca 2.2 kDa smaller than the normal species, which is present in the **serum** of patients with carbohydrate-deficient glycoprotein (CDG) syndrome, was identified by these new methods. Adduct ions were attached to the transferrin even with samples treated chem. such as by reaction with Ba(OAc)2, NH4OAc and HCl. The obsd. mol. **wt.** of transferrin was smaller when analyzed by reflectron than by linear-type MALD/TOF-MS, and the latter was closer to the theor. mol. **wt.** It is possible that sialic acid in the transferrin mol. was destroyed during passage through the reflectron type. **ESI**-MS using the infusion sample-loading method showed the signal of the abnormal α-chain subunit from Hb M-Osaka (Boston : 58His→Tyr) clearly sepd. from that of the normal α-chain in the spectrum of globin mixt. prepd. from the patients' hemolyzates. These procedures can provide routine clin. tools for the diagnosis of inborn errors of **protein** structure.

L37 ANSWER 147 OF 568 CA COPYRIGHT 2002 ACS
AN 121:30434 CA
TI Measurement of iminodipeptides in the **serum** of patients with prolidase deficiency using liquid **chromatography-mass spectrometry**
AU Sugahara, Kazunori; Zhang, Jianying; Yamamoto, Yasuo; Yasuda, Kayo; Kodama, Hajime; Kodama, Hiroyuki
CS Dep. Chem., Kochi Med. Sch., Kochi, Japan
SO European Journal of Clinical Chemistry and Clinical Biochemistry (1994), 32(3), 113-17
AB Iminodipeptides contg. C-terminal proline or hydroxyproline were detd. in **sera** from patients with prolidase deficiency, in the mother's **serum**, and in the **sera** of unrelated controls, using liq. **chromatog.-mass spectrometry** with an atm. pressure ionization interface system. The sepn. was carried out on a **reversed phase** column using 1 g/l aq. trifluoroacetic acid-methanol (75 + 25, by vol.). The quasi-mol. ions ([M + H])+ of various iminodipeptides contg. C-terminal proline and hydroxyproline were obsd. in the **sera** of patients with prolidase deficiency, using selected ion monitoring. The quasi-mol. ions ([M + H])+ of iminodipeptides contg. C-terminal proline were not obsd. in the **sera** of normal subjects or the patients' mother, but the later did contain various iminodipeptides with C-terminal hydroxyproline. This method proved useful for the detn. of iminodipeptides in the **sera** of patients with prolidase deficiency.

L37 ANSWER 159 OF 568 MEDLINE
AN 93251650 MEDLINE
TI Rapid analysis of hemoglobin variants by cation-exchange **HPLC**.

AU Ou C N; Rognerud C L
CS Department of Pathology, Texas Children's Hospital, Houston 77030.
SO CLINICAL CHEMISTRY, (1993 May) 39 (5) 820-4.
AB We investigated the use of a 3.5 x 0.46 cm **HPLC** column packed with 5-microns particles of porous (100 nm) silica coated with polyaspartic acid for hemoglobin analysis. A 13-min gradient was produced between two mobile phases. The method is capable of separating more than 35 commonly encountered hemoglobin variants within 12 min. Hemoglobin variants identified include Bart's, acetyl F, H, A1c, F, Camden, N-Baltimore, J-Baltimore, N-Seattle, Grady, Fannin-Lubbock, A G-Georgia, Lepore-Baltimore, P-Galveston, G-Coushatta, Lepore-Boston, E, Osu Christiansborg, A2, G-Philadelphia, Korle Bu, Russ, Richmond, D-Los Angeles, Deer Lodge, Montgomery, S, Q-Thailand, G-San Jose, A2', Hasharon, Q-India, Tampa, GS hybrid, C-Harlem, O-Arab, British Columbia, and C. Between-run precision of an in-house pooled hemoglobin control material, AFSCA2, gave CVs of 2-5% for the A, F, S, and C and 8% for the A2 over a 6-month period. The simplicity of sample preparation, high resolution of the system, and high accuracy of the method, combined with complete automation, make this an ideal methodology for the routine **diagnosis** of hemoglobin **disorders** in a clinical laboratory.

L37 ANSWER 167 OF 568 CA COPYRIGHT 2002 ACS
AN 119:112894 CA
TI The use of liquid **chromatography-mass spectrometry** for the identification and quantification of urinary iminodipeptides in prolidase deficiency
AU Sugahara, Kazunori; Ohno, Takashi; Arata, Jiro; Kodama, Hiroyuki
CS Dep. Chem., Kochi Med. Sch., Kochi, Japan
SO European Journal of Clinical Chemistry and Clinical Biochemistry (1993), 31(5), 317-22
AB It has been reported that the **urine** of patients with prolidase deficiency contains various iminodipeptides with a carboxyl-terminal proline (hydroxyproline). These iminodipeptides have hitherto been detected indirectly by acid hydrolysis or enzymic digestion, followed by amino acid anal. In the present study, it was shown that X-Pro could be distinguished from Pro-X when the iminodipeptides were analyzed directly by liq. **chromatog.** coupled with atm. pressure ionization **mass spectrometry** (**LC**/API-MS), with scanning of the protonated mol. ions ([M + H]+). The same procedure also successfully quantified urinary iminodipeptides from patients with prolidase deficiency. A quant. investigation of two siblings with prolidase deficiency revealed that the patient with severe clin. symptoms excreted more iminodipeptides than the other who did not have serious symptoms. **LC**/API-MS also revealed iminodipeptides (Gly-Hyp and Pro-Hyp) in the **urine** of the mother of the patients and in normal volunteers. Patients excreted much more Pro-Hyp than normal volunteers, whereas no quant. differences were found between the mother and controls. In patients, the excretion of large quantities of X-Pro is due to their very low prolidase activity towards this type of substrate. In the erythrocytes of patients, prolidase activity towards X-Hyp was extremely low; even in the mother and normal volunteers, it was remarkably low in comparison with the activity against X-Pro.

L37 ANSWER 175 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:411437 BIOSIS
TI A **peptide**-like putative marker substance of laryngeal cancer patients.
AU Tamas, L. (1); Sziklai, I.; Ribari, O.; Repassy, G.
CS (1) Semmelweis Univ. Med. Sch. ENT Dep., Szigony u. 36, Budapest, Hungary-1083
SO European Archives of Oto-Rhino-Laryngology, (1993) Vol. 250, No. 3, pp.

157-160.

AB Acidic ethanol precipitation, gel-filtration **chromatography** (Sephadex G-25) and capillary isotachophoresis were performed on **serum** and tumor tissue samples from eight patients with stage III and IV laryngeal cancers. An anionic 0.3-5 kDa molecular mass substance that was probably **peptide** was recorded in both the **serum** and cancer tissue, but could not be shown in the **serum** of five control subjects. This substance disappeared from the **sera** of four patients after total laryngectomy and they have not lived without tumor recurrence for about 2 years. Three of the other four patients developed tumor recurrences while one patient has remained tumor-free. Our findings support a hypothesis that the **peptide**-like molecule is characteristic of laryngeal cancer and can possibly be used for **monitoring** the **disease**.

L37 ANSWER 181 OF 568 CA COPYRIGHT 2002 ACS
AN 116:192085 CA
TI Diagnostic and prognostic methods based on soluble derivatives of the beta amyloid **protein** precursor
IN Younkin, Steven G.; Palmert, Mark R.
PA Case Western Reserve University, USA
SO PCT Int. Appl., 42 pp.
PI WO 9200521 A1 19920109 WO 1991-US4607 19910627
PRAI US 1990-546485 19900629
AB The prognosis, diagnosis, staging, and response to therapy of Alzheimer's **disease** (AD) are established by **measurement**, in the cerebrospinal **fluid** (CSF), of the ~25-kDa, ~105-kDa, and ~125-kDa sol. derivs. of β-amyloid precursor **protein** (βAPP). Detection of an increase in the percentage of ~25-kDa **protein**, a decrease in the percentage of ~105-kDa **protein**, or high abs. levels of all 3 sol. βAPP derivs. relative to healthy individuals can be used to diagnose or prognose AD or Down's syndrome or as an indication of neurol. aging. The ~25-kDa **protein** was purified from human CSF by (NH4)2SO4 fractionation, Mono-Q **chromatog.**, and preparative SDS-PAGE, and had an N-terminal sequence of Leu-Glu-Val-Pro-Thr-Asp-Gly-Asn-Ala-Gly.

L37 ANSWER 190 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:3201 BIOSIS
TI Preliminary characterization of circulating amino- and carboxy-terminal fragments of parathyroid hormone-related **peptide** in humoral hypercalcemia of malignancy.
AU Burtis, William J. (1); Fodero, Joseph P.; Gaich, Gregory; Debeyssey, Mark; Stewart, Andrew F.
CS (1) Res. 151, West Haven VA Med. Cent., 950 Campbell Ave., West Haven, Conn. 06516
SO Journal of Clinical Endocrinology & Metabolism, (1992) Vol. 75, No. 4, pp. 1110-1114.
AB PTH-related **peptide** (PTHrP) immunoreactivity in **plasma** from six well characterized patients with humoral hypercalcemia of malignancy was characterized by gel filtration **chromatograpy**. An immunoradiometric assay directed against the N-terminal 74 amino acids of PTHrP and a RIA directed against the C-terminal region (amino acids 109-138) of the **peptide** were used to assay column fractions. When examined using acid (pH 5.0) nondenaturing conditions, N-terminal PTHrP immunoreactivity eluted with an apparent M-r of 30,000-40,000. The apparent M-r of this PTHrP fragment shifted to approximately 25,000 when gel filtration was performed at pH 9.0. The apparent M-r shifted further, to approximately 6,500, when chromotographed under denaturing conditions in 4 M guanidine-HCl. Carboxyterminal PTHrP immunoreactivity in **plasma** eluted with an M-r of approximately 12,000 under acid nondenaturing conditions, as did the

synthetic C-terminal PTHrP column marker, PTHrP (109-138). Synthetic PTHrP (1-36) and (1-74), and recombinant PTHrP (1-141) as well as native PTHrP species found in milk and keratinocyte-conditioned medium migrated in their expected positions when analyzed under alkaline nondenaturing or under denaturing condition. We conclude that native, synthetic, and recombinant PTHrP **peptides** may migrate anomalously when examined using gel filtration under nondenaturing conditions, and such studies should be interpreted with caution. **Plasma** from patients with humoral hypercalcemia of malignancy contains at least two PTHrP species. One native N-terminal fragment appears, as **assessed** under denaturing **conditions**, to have an M-r of approximately 6,500, and to therefore comprise approximately 50-60 amino acids of full-length PTHrP. A second **chromatographically** and immunologically distinct C-terminal fragment with an M-r of approximately 12,000 under nondenaturing conditions is also present.

L37 ANSWER 196 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1992:310367 BIOSIS
TI GENERATION OF CHEMOTACTIC FACTOR BY HEPATOCYTES ISOLATED FROM CHRONICALLY ETHANOL-FED RATS.
AU SHIRATORI Y; TAKADA H; HAI K; KIRIYAMA H; NAGURA T; TANAKA M; MATSUMOTO K; KAMII K
CS 2ND DEP. INTERN. MED., FAC. MED., UNIV. TOKYO, 7-3-1 HONGO, BUNKYO-KU, TOKYO 113, JPN.
SO DIG DIS SCI, (1992) 37 (5), 650-658.
AB In an attempt to clarify a mechanism of polymorphonuclear cell and/or macrophage infiltration in alcoholic liver **disease**, we **investigated** a novel chemotactic and activating factor generated by rat hepatocytes isolated from the chronically ethanol-fed rats. Hepatocytes and hepatic macrophages were isolated from rat liver by perfusion and digestion with collagenase and subsequently by differential centrifugation on a metrizamide gradient. Rat polymorphonuclear cells were prepared from **blood** by the dextran sedimentation and Hypaque-Ficoll technique. Chemotactic activity was measured as migration of polymorphonuclear cells or hepatic macrophages using a chemotactic chamber. When hepatocytes isolated from the ethanol-fed rats were cultured in vitro, chemotactic activity for rat polymorphonuclear cells and hepatic macrophages was demonstrated in the culture supernatant. Inhibitors of transcription and **protein** synthesis reduced generation of chemotactic factor from these hepatocytes. Chemotactic activity of the conditioned medium was reduced after trypsin (0.25%, 37° C, 30 min) or heat (56° C, 30 min) treatment. The chemotactic activity was eluted at molecular **weights** of 20-25 kDa and 40-45 kDa following Sephadex G-150 **chromatography**. Superoxide anion production by polymorphonuclear cells and hepatic macrophages under the stimulation of phorbolmyristate acetate was enhanced in the presence of this chemotactic factor. This chemotactic factor may contribute to the pathogenesis of alocholic liver disease.

L37 ANSWER 200 OF 568 CA COPYRIGHT 2002 ACS
AN 117:103302 CA
TI Optimization of capillary zone electrophoresis/electrospray ionization parameters for the **mass spectrometry** and tandem **mass spectrometry** analysis of **peptides**
AU Moseley, M. A.; Jorgenson, J. W.; Shabanowitz, J.; Hunt, D. F.; Tomer, K. B.
CS Dep. Chem., Univ. North Carolina, Chapel Hill, NC, USA
SO Journal of the American Society for Mass Spectrometry (1992), 3(4), 289-300
AB The soln. chem. **conditions** necessary for optimum **anal.** of **peptides** by capillary zone electrophoresis (CZE)/electrospray ionization **mass spectrometry** and CZE electrospray ionization tandem **mass spectrometry** have

been studied. To maximize the signal-to-noise ratio of the spectra it was found necessary to use acidic CZE buffers of low ionic strength. This not only increases the total ion current, but it also serves to fully protonate the **peptides**, minimizing the distribution of ion current across the ensemble of possible charge states. The use of acidic buffers protonates the **peptides**, which is advantageous for **mass spectrometry** and tandem **mass spectrometry** anal., but is problematic with CZE when bare fused silica CZE columns are used. These conditions produce pos. charged **peptides**, and neg. charged silanol moieties on the column wall, inducing adsorption of the pos. charged **peptides**, thus causing zone broadening and a loss in sepn. efficiency. This problem was circumvented by the prepn. of chem. modified CZE columns, which, when used with acidic CZE buffers, will have a pos. charged inner column wall. The electrostatic repulsion between the pos. charged **peptides** and the pos. charged CZE column wall minimizes adsorption problems and facilitates high efficiency sepns. Full-scan mass spectra were acquired from injections of as little as 160 fmols of test **peptides**, with CZE sepn. efficiencies of up to 250,000 theor. plates.

L37 ANSWER 201 OF 568 CA COPYRIGHT 2002 ACS
AN 119:25918 CA
TI Analysis of **plasma** components in uremic hemodialyzed patients by **LC**/APCI-MS
AU Nagase, Kazuko; Ohki, Toyokazu; Odani, Hiroko; Takai, Ichiro; Fujita, Yosiro; Morita, Hiroyuki; Yamamoto, Tomio; Inoue, Itaru; Shinzato, Takahiro; Maeda, Kenji
CS Dep. Intern. Med., Nagoya Univ. Branch Hosp., Japan
SO Nippon Iyo Masu Supekutoru Gakkai Koenshu (1992), 17, 271-4
LA Japanese
AB **Peptide** contg. hydroxyproline was analyzed by a **HPLC**/atm. pressure chem. ionization **mass spectrometer**. The concn. of prolylhydroxyproline in **plasma** of uremic hemodialyzed patients was higher in comparison with that of normal subjects. The level was the highest in 2 patients with secondary hyperparathyroidism. The detection of prolylhydroxyproline in **plasma** of hemodialyzed patients may be useful for the diagnosis of bone resorption.

L37 ANSWER 207 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:57896 BIOSIS
TI Circulating and excreted forms of atrial natriuretic **peptide** in healthy subjects and patients with renal diseases.
AU Marumo, F. (1); Shichiri, M.; Emori, T.; Ando, K.
CS (1) Second Dep. Internal Med., Tokyo Med. Dental University, 5-45 Yushima 1-Chome, Bunkyo-ku, Tokyo 113 Japan
SO Clinical Nephrology, (1992) Vol. 38, No. 4, pp. 203-208.
AB The immunoreactivity of **plasma** and **urine** atrial natriuretic **peptide** (ANP) was **measured** in patients with renal **disease** and in healthy volunteers. The molecular forms of ANP in these subjects were estimated by gel permeation **chromatography** and **reverse phase** high performance liquid **chromatography**. No significant increase in **plasma** ANP was observed in patients with nephrotic syndrome or non-oliguric chronic renal failure compared to healthy volunteers. However, **plasma** ANP **levels** were significantly increased in patients on hemodialysis (normal 18.6 +- 11.4 fmol/ml; hemodialysis 91.2 +- 69.9 fmol/ml, p lt 0.01). **Chromatographic** analyses revealed that **plasma** ANP consisted of only alpha-ANP or combined alpha- and gamma-ANP in healthy volunteers and in nephrotic patients, whereas beta-ANP frequently appeared in the **plasma** of both dialyzed and non-dialyzed chronic renal failure patients. Excreted forms, except in subjects free from renal disease where gamma-ANP may serve as a potential marker of glomerular injury in humans.

L37 ANSWER 213 OF 568 CA COPYRIGHT 2002 ACS

AN 116:232923 CA
TI Urokinase and the mechanism of osteoblastic metastases by prostate cancer
AU Goltzman, D.; Bolivar, I.; Moroz, L. A.; Rabbani, S. A.
CS R. Victoria Hosp., McGill Univ., Montreal, QC, H3A 1A1, Can.
SO Fibrinolysis (1992), 6(Suppl. 1), 63-9
AB The authors **examd.** the **pathogenesis** of osteoblastic metastases by attempting to identify growth factors for cells of the osteoblast phenotype which are produced by prostatic cancer tissue. In initial studies, surgical specimens of human prostate cancer (CA) and benign prostatic hyperplasia (BPH) tissue were employed as sources of prostatic tissue, and mitogenic activity for osteoblastic cells was assessed in primary cultures of fetal calvarial cells and in osteosarcoma cells. These studies identified the presence of acid-stable **peptide** mitogens for osteoblasts in both CA and BPH. In order to pursue these findings, the prostate cancer cell line PC-3 was employed. Biochem. anal. of **serum**-free conditioned PC-3 medium, using mainly **reverse-phase HPLC** disclosed the presence of a mitogen for osteoblastic cells with a mol. **wt.** ~15 kDa. Amino acid sequencing indicated that this was an amino-terminal fragment of urokinase (UK). Further studies demonstrated abundant plasminogen activator activity in PC-3 conditioned medium and substantial mRNA encoding UK in PC-3 cells. High-mol.-**wt.** (HMW) UK but not low-mol.-**wt.** (LMW) UK was mitogenic and increased cell nos. in osteoblastic cultures but not in control fibroblast cultures. Specific, competitive binding of HMW but not LMW UK to osteoblastic cells was obsd. These studies indicated that the mitogenic activity of UK indeed resides in the amino-terminal region. This was confirmed by demonstrating mitogenic activity for osteoblastic cells using a **peptide** contg. the growth factor domain of UK. In summary, these studies have shown that an amino-terminal fragment of UK produced by PC-3 cells has growth factor activity for cells of the osteoblast phenotype. UK fragments may therefore be of importance in the pathogenesis of osteoblastic metastases produced by prostatic cancer cells.

L37 ANSWER 219 OF 568 MEDLINE
AN 91191273 MEDLINE
TI Urinary **chromatographic profiles** in psychiatric **diseases**.
AU Gilroy J J; Ferrier I N; Crow T J
SO BRITISH JOURNAL OF PSYCHIATRY, (1991 Feb) 158 288-9.

L37 ANSWER 223 OF 568 CA COPYRIGHT 2002 ACS
AN 115:180953 CA
TI The **18**-kilodalton antigen secreted by Aspergillus fumigatus
AU Latge, Jean Paul; Moutaouakil, Mohamed; Debeaupuis, Jean Paul; Bouchara, Jean Philippe; Haynes, Ken; Prevost, Marie Christine
CS Unite Mycol., Inst. Pasteur, Paris, Fr.
SO Infection and Immunity (1991), 59(8), 2586-94
AB One of the major antigens secreted in vitro by A. fumigatus is an **18**-kDa basic **protein** which has been purified by cation-exchange **chromatog.** It is recognized by **sera** from aspergilloma patients. It is also the major circulating antigen found in **urine** of patients with invasive aspergillosis. These results indicated that this antigen has potential for the diagnosis of both aspergilloma and invasive aspergillosis.

L37 ANSWER 236 OF 568 CA COPYRIGHT 2002 ACS
AN 114:243875 CA
TI Liquid **chromatography-mass spectrometry** for simultaneous analyses of iminodipeptides containing an N-terminal or a C-terminal proline
AU Sugahara, Kazunori; Kodama, Hiroyuki
CS Dep. Chem., Kochi Med. Sch., Nankokushi, 783, Japan

SO Journal of Chromatography (1991), 565(1-2), 408-15
AB Simultaneous analyses of synthetic iminodipeptides contg. an N-terminal proline or a C-terminal proline were demonstrated by using liq. **chromatog.-mass spectrometry** with an atm. pressure ionization interface system. The sepn. of iminodipeptides was done on a **reversed-phase HPLC** column using 0.1% aq. trifluoroacetic acid-MeOH (75:25, pH 2.0) as mobile phase. Very intense protonated mol. ions [M + H]+ of various synthetic iminodipeptides, Pro-Gly, Gly-Pro, Pro-Ala, Ala-Pro, Pro-Val, Val-Pro, Pro-Leu, and Leu-Pro, were obsd. Pro-Gly (Pro-X) and Gly-Pro (X-Pro) have the same protonated mol. ion (m/z 173), but the peaks of these compds. on the mass **chromatograms** were clearly distinguished by the differences of the retention times and mass spectra. The synthetic iminodipeptides contg. an N-terminal proline added to **urine** samples from a patient with prolinase deficiency also were distinguished from iminodipeptides contg. a C-terminal proline in **urine** samples from a patient with prolidase deficiency by scanning the [M + H]+ ion of each iminodipeptide. The method was established to measure simultaneously the various iminodipeptides contg. an N-terminal or a C-terminal proline in biol. samples.

L37 ANSWER 250 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1992:12063 BIOSIS
TI POSSIBLE PATHOGENETIC ROLE OF LOW-MOLECULAR-**WEIGHT PROTEINS** IN BALKAN NEPHROPATHY.
AU BATUMAN V
CS NEPHROL. SECT., TULANE MED. CENTER, 1430 TULANE AVE., NEW ORLEANS, LA. 70112, USA.
SO KIDNEY INT SUPPL, (1991) 0 (34), S89-S92.
AB Balkan endemic nephropathy (BEN) is a tubulointerstitial **disease characterized** by increased-low-molecular-**weight protein** (LMWP), most notably, β2-microglobulin (β2m) excretion in **urine**. We previously demonstrated that two species of LMWPs, immunoglobulin light chain (**LC**) and recombinant alpha interferon (rIF), are toxic at proximal tubule cell membrane level. Myeloma **LCs** and rIF inhibit Na-dependent uptake of 14C-L-alanine and 14C-D-glucose by rat renal brush border membrane (BBM) vesicles at half-maximal inhibitory concentrations, IC50, ranging from 68 to 140 μM for **LCs**, and 5.4 to 18 nM for rIF. We further demonstrated that **LCs** bind to high-capacity, low-affinity sites on BBM with dissociation constants (Kd) ranging from 16 to 118 μM, a range similar to IC50s observed with the same **LCs**. Binding site occupancy is inversely related to alanine ($r = -0.95$, $P < 0.01$), and glucose uptake ($r = -0.96$, $P < 0.01$), implying that **LC** nephrotoxicity is determined by its binding to BBM. β2m shares behavioral and structural similarities with both **LC** and rIF. Preliminary studies in our laboratory showed that unlabeled **LCs** compete for the same bindings sites on BBM with β2m. These observations confirm that all LMWP, including β2m, are potentially nephrotoxic. Thus, the characteristic β2-microglobulinuria of BEN may be more than a consequence of tubular dysfunction, and may play a pathogenetic role.

L37 ANSWER 251 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1991:161091 BIOSIS
TI URINARY EXCRETION OF PARATHYROID HORMONE-RELATED **PROTEIN** FRAGMENTS IN PATIENTS WITH HUMORAL HYPERCALCEMIA OF MALIGNANCY AND HYPERCALCEMIC TUMOR-BEARING NUDE MICE.
AU IMAMURA H; SATO K; SHIZUME K; SATOH T; KASONO K; OZAWA M; OHMURA E; TSUSHIMA T; DEMURA H
CS INST. CLIN. ENDOCRINOL., TOKYO WOMEN'S MED. COLL., KAWADA-CHU 8-1, SHINJUKU-KU, JPN. 162.
SO J BONE MINER RES, (1991) 6 (1), 77-84.

AB To investigate whether parathyroid hormone-related **protein** (PTHrP), a hypercalcemia-inducing factor responsible for malignancy-associated hypercalcemia (MAH), is excreted into **urine** of these patients, radioimmunoassay was established using antiserum specific for the C-terminal region of PTHrP-(127-141). Immunoreactive PTHrP (iPTHrP) was detected in the **urine** of all patients with MAH (n = 6) in whom nephrogenous cyclic AMP excretion was evaluated. However, iPTHrP was not detected in the **urine** of normal subjects (n = 25) or hypercalcemic patients with primary hyperparathyroidism (n = 8). In normocalcemic patients with malignant **disorders** iPTHrP was not **detected** in the **urine** in most cases (24 of 25 patients) but was detectable in 1 of 25 patients. iPTHrP wa also detected in the **urine** of hypercalcemic nude mice transplanted with PTHrP-producing tumors, but not in the **urine** of control and normocalcemic nude mice trnasplanted with PTHrP-nonproducing tumor. Furthermore, **size-exclusion** high-performance liquid **chromatography** revealed that the molecular **weight** of iPTHrP is about 2000-6000 **daltons** in the **urine** of patients as well as tumor-bearing nude mice. These data indicate that the fragments of the C-terminal region of PTHrP are excreted into the **urine** of patients with MAH and in a few normocalcemic patient with malignancies, suggesting that the measurement of iPTHrP in the **urine** is potentially useful in the differential diagnosis of hypercalcemia, particularly in differentiating humoral hypercalcemia of malignancy and primary hyperparathyroidism.

L37 ANSWER 265 OF 568 MEDLINE
AN 91079422 MEDLINE
TI A case of pseudo-Nelson's syndrome: cure of ACTH hypersecretion by removal of a bronchial carcinoid tumor responsible for Cushing's syndrome.
AU Lalau J D; Vieau D; Tenenbaum F; Westeel P F; Mesmacque A; Lenne F; Quichaud J
CS Service Medicine Interne, Endocrinologie, Centre Hospitalier Regional, Amiens, France.
SO JOURNAL OF ENDOCRINOLOGICAL INVESTIGATION, (1990 Jun) 13 (6) 531-7.
AB It may sometimes be difficult to distinguish Cushing's disease from ectopic ACTH syndrome. A case is described here of a patient with a Cushing's syndrome and diagnostic difficulties. Initial features were consistent with a Cushing's **disease** (in particular metopirone **test** was positive). Because of relapse of hypercortisolism after mitotane therapy, total adrenalectomy was performed. Thereafter features occurred that evoked Nelson's syndrome, including high **plasma** ACTH levels and a pituitary mass syndrome. Pituitary reserve testings by vasopressin or corticotropin-releasing factor were positive, although inconstantly, in that **plasma** ACTH increased. A lung tumor was discovered about 20 yr after the first clinical signs of hypercortisolism. Its removal led to the discovery of a bronchial carcinoid tumor and was followed by normalization of **plasma** ACTH levels. An analysis of proopiomelanocortin-related **peptides** was performed postoperatively on the **blood** drawn before and after the tumor resection and on the tumor; the results of this study would have been contributive to the diagnosis of occult ectopic ACTH tumor. In conclusion this case demonstrates the limitations of the conventional procedures in the diagnosis of the ectopic ACTH syndrome. At contrast the newer biochemical procedures may be very useful in determining the type of hypercortisolism.

L37 ANSWER 266 OF 568 MEDLINE
AN 90130935 MEDLINE
TI Multiple osteocalcin fragments in human **urine** and **serum** as detected by a midmolecule osteocalcin radioimmunoassay.
AU Taylor A K; Linkhart S; Mohan S; Christenson R A; Singer F R; Baylink D J
CS Jerry Pettis Veterans Administration Hospital, Loma Linda, California

92357.
SO JOURNAL OF CLINICAL ENDOCRINOLOGY AND METABOLISM, (1990 Feb) 70 (2) 467-72.
AB Reliable markers of bone formation are essential to the **investigation** of metabolic bone **disorders**. In this regard, evidence indicates that circulating levels of human osteocalcin (OC) correlate with the skeletal isoenzyme of alkaline phosphatase and can be used as an index of bone formation. A disadvantage of using **serum** OC as a marker of formation is its diurnal variation. To address this problem we carried out our studies to determine the usefulness of **urine** in the assessment of bone turnover. Using a midmolecule specific human OC RIA, we were able to detect OC in **urine** of normal adults (42 mugeq/g creatinine), normal children (849 mu/geq/g creatinine), and Paget's disease patients (613 mugeq/g creatinine). Immunoreactive fragments of OC in human **urine** and human **serum** were separated by high pressure liquid **chromatography**. Multiple fragments were found in normal adult **urine** that were not detected in normal adult **serum**. Uremic and Paget's disease **sera** contain several immunoreactive forms of OC, other than the intact molecule, not found in normal adult **serum**. Additionally, both Paget's disease **sera** and **urine** contained a specific peak of immunoreactive material, eluting at 25% acetonitrile, that was not found in any other **serum** or **urine** tested. Urinary OC (uOC) correlated with both skeletal alkaline phosphatase (r = 0.91) and **serum** OC (r = 0.83), indices of skeletal formation. While uOC has a diurnal variation similar to that of **serum** OC, determinations of 24-h uOC give integrated values of daily bone turnover rates. Z-Score analysis indicates that uOC (z = 14.04) is better able to distinguish between normal children with high bone turnover and normal adults than either skeletal alkaline phosphatase (z = 8.87) or **serum** OC (z = 9.01).

L37 ANSWER 271 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1990:351352 BIOSIS
TI ELEVATED **PLASMA** ENDOTHELIN IN PATIENTS WITH DIABETES MELLITUS.
AU TAKAHASHI K; GHATEI M A; LAM H-C; O'HALLORAN D J; BLOOM S R
CS DEP. MED., FRANCIS FRASER LAB., 2ND FLOOR, ROYAL POSTGRADUATE MED. SCH., HAMMERSMITH HOSP., DU CANE ROAD, LONDON W12 0NN, UK.
SO DIABETOLOGIA, (1990) 33 (5), 306-310.
AB **Plasma** concentrations of endothelin, a vasoconstrictor **peptide** released from vascular endothelial cells, have been measured by radioimmunoassay in 100 patients with diabetes mellitus and 19 healthy subjects. The **plasma** immunoreactive-endothelin concentrations were found to be greatly raised in the patients with diabetes (1,880 ± 120 fmol/l, mean ± SEM) compared with the healthy subjects (540 ± 50 fmol/l, p 7L 0.005). The elevation of immunoreactive-endothelin could not be explained by secondary changes in **blood** pressure or renal disease and did not correlate with the presence of diabetic retinopathy, duration of diabetes mellitus, fasting **blood** glucose or **serum** fructosamine. Fast **protein** liquid **chromatographic** analysis of the diabetic **plasma** immunoreactive-endothelin showed three forms, one in a very big molecular **weight** position, one intermediate and one in the position of endothelin-1 itself. No material appeared in the positions of endothelin-2 and 3. **Chromatographic** analysis of normal **plasma** showed only the big molecular **weight** peak while material in the endothelin-1, 2 or 3 positions was below detection. The elevation of endothelin in diabetic patients may be a marker of, and further exacerbate, their vascular disease.

L37 ANSWER 273 OF 568 CA COPYRIGHT 2002 ACS
AN 113:94144 CA
TI Liquid **chromatography-mass spectrometry** for the qualitative analyses of iminodipeptides in the **urine** of patients with prolidase deficiency
AU Kodama, Hiroyuki; Nakamura, Hiroyo; Sugahara, Kazunori; Numajiri, Yoko

CS Dep. Chem., Kochi Med. Sch., Nankoku, 781-51, Japan
SO Journal of Chromatography (1990), 527(2), 279-88
AB Analyses of std. iminodipeptides and iminodipeptides in the **urine** of patients with prolidase deficiency have been demonstrated using liq. **chromatog.-mass spectrometry** with an atm. pressure ionization interface system. The sepn. was carried out on a **reversed-phase** column using 0.1% aq. trifluoroacetic acid-methanol (70:30 or 80:20). Very intense quasi-mol. ions ([M + H]+) of various std. iminodipeptides were obsd. by this method. The quasi-mol. ions [M + H]+ of various iminodipeptides (Gly-Pro, Ala-Pro, Val-Pro, Leu-Pro, Ile-Pro, Ser-Pro, Thr-Pro, Glu-Pro, Asp-Pro, His-Pro, Lys-Pro, Pro-Pro, and Tyr-Pro as iminodipeptides contg. proline as the C-terminal residue and Glu-Hyp, Pro-Hyp, Ile-Hyp, and Gly-Hyp as iminodipeptides contg. hydroxyproline as the C-terminal residue) were identified in the **urine** of patients with prolidase deficiency.

L37 ANSWER 303 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:341893 BIOSIS
TI URINARY L VALYLPROLINE IN PATIENTS WITH AORTIC ANEURYSMS.
AU COHEN J R; STEIN T A; DIETZEK A; WISE L
CS DEP. SURG., LONG ISLAND JEWISH MED. CENT., NEW HYDE PARK, N.Y. 11042.
SO SURG GYNECOL OBSTET, (1989) 168 (6), 507-512.
AB Recent evidence indicates that metabolism of elastin may be altered in patients with different types of infrarenal aortic disease and that the phenotypic expression of aortic disease may be dependent on the balance between aortic elastase and antiprotease activity. The **dipeptide** L-valyl proline (LVP) is a specific amino acid sequence for elastin and can be quantitated by high peformance liquid **chromatography** analysis of the **urine**. This study was done to determine if alterations in systemic elastin metabolism could be detected in patients with different types of infrarenal aortic **disease** by **quantitating** urinary LVP. Patients were divided into one of five groups and had **urine** analyzed for LVP. These are control, no known aortic disease (N=12); occlusive aortic disease (n=10); elective abdominal aortic aneurysms (AAA) (n=26); ruptured AAA (n=5), and multiple aneurysms (n=4). **Urine** values were correlated with aortic elastase and aortic antiprotease activity. Urinary LVP was significantly higher in patients with multiple aneurysms (1,209 micrograms per milliliter of **urine**) as compared with all of the other groups. Patients with elective AAA had significantly higher urinary LVP (40.5 micrograms per milliliter of **urine**) than patients with occlusive disease (9.1 micrograms per milliliter of **urine**) and those in the control group (4.2 micrograms per milliliter of **urine**). Patients with ruptured AAA did not have significantly elevated urinary LVP compared with other groups (18.6 micrograms per milliliter of **urine**). Urinary LVP increased significantly as aortic elastase and aortic elastase and antiprotease activity increased. These data suggest that elastin metabolism, as reflected by urinary LVP, is altered in patients with aortic aneurysmal disease and provide further evidence ot support the concept that systemic elastin metabolism is altered in patients with different types of infrarenal aortic pathologic findings.

L37 ANSWER 308 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1990:9818 BIOSIS
TI ANALYSIS AND **HPLC** FRACTIONATION OF **URINE** FROM PATIENTS WITH CYSTIC FIBROSIS CHRONIC LUNG DISEASES AND NORMAL CONTROLS.
AU GUMAN-WIGNOT T M; KAUFMAN J; HOLSCLAW D S JR; SCHMOYER I R; ALHADEFF J A
CS DEP. CHEM., BLDG. A, MTC, LEHIGH UNIV., BETHLEHEM, PA. 18015.
SO CLIN BIOCHEM, (1989) 22 (5), 377-384.
AB The amounts of creatinine, **protein**, carbohydrate and sialic acid in the **urine** of 19 patients with cystic fibrosis (CF), 12 normal controls and 11

pathological controls with chronic lung **disease** have been **determined**. The mean creatinine excretion levels of the total CF group as well as the CF subgroups are significantly decreased when compared to normal controls but comparable to pathological controls. Mean urinary **protein** levels appear to be increased in patients with CF compared to normal controls and pathological controls but the increased levels resulted from factors (e.g., presence of diabetes mellitus) other than CF. No significant differences were found in amounts of total carbohydrate and sialic acid in **urine** and fractionated urinary preparations for the total group of nondiabetic patients with CF when compared to both normal and pathological controls. **HPLC** fractionation of low Mr (< 10,000 **Daltons**) urinary preparations indicated the presence of an unknown peak in all of the antibiotic-treated CF patients, 43% of CF patients on low or no medication, 17% of the normal controls and 9% of the pathological controls. The present results illustrate the importance of including appropriate pathological controls and dividing patients with CF into subgroups according to clinical factors and types of therapy employed.

L37 ANSWER 316 OF 568 CA COPYRIGHT 2002 ACS
AN 113:113240 CA
TI **LC**/MS (liquid **chromatography/mass spectrometry**) analysis of iminodipeptides in the **urine** of patients with prolidase deficiency
AU Kodama, Hiroyuki; Nakamura, Hiroyo; Numashiri, Yoko
CS Dep. Chem., Kochi Med. Sch., Kochi, Japan
SO Nippon Iyo Masu Supekutoru Gakkai Koenshu (1989), 14, 217-20
LA Japanese
AB Prolidase deficiency is a rare autosomal recessive **disease characterized** by clin. features such as chronic recurrent ulcerative dermatitis, mental retardation, and massive quantities of iminodipeptides excreted into the **urine**. Very intense quasi-mol. ions (M+H)+ of various std. iminodipeptides were obsd. by using a liq. **chromatog**./atm. pressure ionization **mass spectrometer**. The quasi-mol. ions (M+H)+ of various iminodipeptides were obsd. in the **urine** of patients with prolidase deficiency. Gly-Pro, Ala-Pro, Val-Pro, Leu-Pro, Ile-Pro, Ser-Pro, Thr-Pro, Glu-Pro, Asp-Pro, His-Pro, Lys-Pro, Pro-Pro, Phe-Pro, Tyr-Pro as iminodipeptides contg. proline, and Glu-Hyp, Pro-Hyp, Leu-Hyp, Gly-Hyp as iminodipeptides contg. hydroxyproline were identified from the **urine** of patients with prolidase deficiency.

L37 ANSWER 324 OF 568 CA COPYRIGHT 2002 ACS
AN 110:208695 CA
TI Assay of medium-molecular **peptides** in **serum** of patients with chronic renal insufficiency
AU Salikhova, N. N.; Akhmedzhanov, R. I.; Mukhamadieva, Sh. G.; Sakhibov, A. D.
CS Tashk. Med. Inst., Tashkent, USSR
SO Laboratornoe Delo (1989), (3), 48-52.
LA Russian
AB Gel **chromatog**. on ultragel AcA-202 was used to demonstrate the presence of medium-mol. **wt**. (MMW) **peptides** in humans with renal toxicity of varying severity. In a rapid method for detg. MMW, 20% TCA was used to ppt. the high-mol.-**wt**. (HMW) **proteins** and high-performance gel **chromatog**. on TSK-gel HW-40 was used for monitoring total pptn. of HMW **proteins**. Use of 20% TCA increased the concn. of MMW in the **serum** presumably due to the release of albumin-bound MMW. Folin reaction was used to model the exptl. procedure. The level of MMW increased with severity of kidney injury as seen in humans with varying kidney problems. The method was also used to study the efficiency of hemodialysis and hemosorption.

L37 ANSWER 339 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:126329 BIOSIS
TI CANCER-ASSOCIATED COMPOSITION CHANGES IN HUMAN **SALIVA**.
AU KHARCHENKO S V; KORNEEVA G A; VETROV A A
SO IZV AKAD NAUK SSSR SER BIOL, (1988) 0 (4), 524-530.
LA Russian
AB Comparative study of **saliva** composition from healthy humans and humans having cancer rectum was performed by gel filtration, **reversed phase** high pressure liquid **chromatography** and polyacrylamide gel electrophoresis. Specific changes of low-molecular-**weight protein** composition, neutral proteinase activity decrease and appearance of new metabolits of molecular **weight** about 300-600 **daltons** were observed. Possible role and significance of observed phenomena in **pathogenese** and cancer **diagnostic** is discussed.

L37 ANSWER 342 OF 568 CA COPYRIGHT 2002 ACS
AN 110:188665 CA
TI Automated sample processing and **HPLC** analysis of diagnostic marker molecules in biological matrixes
AU Boos, K. S.; Wilmers, B.; Sauerbrey, R.
CS Lab. Biol. Chem., Univ. Paderborn, Paderborn, D-4790, Fed. Rep. Ger.
SO Proc. Int. Conf. Biochem. Sep., 2nd (1988), 363-4. Editor(s): Pick, J.; Vajda, J. Publisher: Hungarian Biochemical Society, Budapest, Hung.
AB Precolumn **size-exclusion chromatog.** is useful for the removal of **protein** and other unwanted constituents for biol. samples for anal. by **HPLC**. Utilizing a sample processing scheme with the **size-exclusion chromatog.** step enables a fully automated **HPLC** anal. of body **fluids** for diagnostic markers, such as catecholamines and metabolites, ribonucleotides, glyco-Hb, etc.

L37 ANSWER 343 OF 568 CA COPYRIGHT 2002 ACS
AN 109:19852 CA
TI **Chromatography**, flow injection analysis and electrophoresis in computer-assisted comparative biochemistry: its application and possibilities in clinical research. Preliminary studies on Crohn's disease
AU Villanueva, V. R.; Mardon, M.
CS Inst. Chim. Subst. Nat., CNRS, Gif-sur-Yvette, 91198, Fr.
SO Journal of Chromatography (1988), 440, 261-73
AB A computer-assisted multicomponent anal. system, developed for comparative biochem. studies, was used for a clin. study of Crohn's disease in which 73 subjects, of comparable age and sex distribution, were considered: 40 with Crohn's disease, 16 with ulcerative colitis and 17 healthy volunteers as controls. **Blood** samples (5 mL) were taken to recover **plasma** and red cells. After extn. and fractionation of low- and high-mol. **wt.** substances, the samples were analyzed by ion-exchange **chromatog.** and electrophoresis. The contents of amino acids, sugars, polyamines and **proteins** in the **plasma** and the red cells from the 3 groups of individuals were compared using statistical (means, variance, principal components anal.) and graphical profile methods. The first results indicate that the content of red cells, in comparison with **plasma**, allows the best differentiation of the 3 groups of subjects considered. In particular, the amino acids (aspartate, threonine, serine, glutamate, glycine, alanine, and leucine), the polyamines (spermidine and spermine) and glucose, show the most significant differences. The methodol. followed and the results obtained, together with possible uses of this computer-assisted multicomponent anal. system in problems concerning clin. research, are discussed.

L37 ANSWER 344 OF 568 MEDLINE

AN 89109598 MEDLINE
TI Attention deficit disorders: a study of **peptide**-containing urinary complexes.
AU Hole K; Lingjaerde O; Morkrid L; Boler J B; Saelid G; Diderichsen J; Ruud E; Reichelt K L
CS Department of Physiology, University of Bergen, Norway.
SO JOURNAL OF DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS, (1988 Aug) 9 (4) 205-12.
AB In several behavioral disorders, we have observed that abnormal amounts of **peptides** and **protein**-associated **peptide** complexes are excreted in the **urine**. The gel filtration patterns of these excreted substances have some specificity for the different disorders. The urinary excretion of **peptide**-containing complexes was studied in 91 boys and 13 girls (mean age 9.4 years, range 1-23) with the clinical **diagnosis** of attention deficit **disorder** (ADD), with or without hyperactivity. The gel filtration of **urine** precipitate showed patterns in all patients that were different from those seen in 36 normal controls. Sixty-four patients had increased benzoic acid-glycoprotein-**peptide** complexes in the late peaks. The symptoms of all these patients fit the criteria for **diagnosis** of attention deficit **disorder** with hyperactivity (ADDH). Thirty-five patients showed reduced amounts of uric acid complexes in the late peaks. Clinically, this group, with the exception of three patients, fit the criteria for **diagnosis** of attention deficit **disorder** without hyperactivity. Five patients showed reduced amounts of all urinary complexes; four of these were hyperactive. Moderate exercise in control children did not change the urinary pattern. One urinary **peptide** fraction from hyperactive patients, purified to homogeneity, increased the uptake of 14C[5-HT] in platelets. Strict clinical, neuropsychological, and psychophysiological selection of the patients reduced the heterogeneity of the patterns. Although more studies are needed, the findings seem promising for the possibility of developing biochemical tests that may be helpful diagnostically.

L37 ANSWER 346 OF 568 CA COPYRIGHT 2002 ACS
AN 111:74281 CA
TI Determination of iminodipeptides in the **urine** of patients with prolidase deficiency using a liquid **chromatography**/atmospheric pressure ionization **mass spectrometer**
AU Kodama, Hiroyuki
CS Dep. Chem., Kochi Med. Sch., Japan
SO Iyo Masu Kenkyukai Koenshu (1988), 13, 157-60
LA Japanese
AB Prolidase deficiency is a rare autosomal recessive **disease characterized** by clin. features such as chronic recurrent ulcerative dermatitis and mental retardation, and massive imunodipeptides are excreted into the **urine** of patients due to a complete deficiency of prolidase activity. A new method for detecting urinary iminodipeptides has been carried out by using liq. **chromatog**./atm. pressure ionization **mass spectrometry**. Std. curves of different concns. of various iminodipeptides were linear and reproducible. In several expts., 90-95% of the iminodipeptides added to normal **urine** was recovered . Iminodipeptides in the **urine** of a normal human could not be detected by this method, but it was possible to detect various iminodipeptides in the **urine** of patients with prolidase deficiency.

L37 ANSWER 349 OF 568 CA COPYRIGHT 2002 ACS
AN 110:91470 CA
TI Digital **HPLC** of natural cis-diol compounds
AU Boos, K. S.; Wilmers, B.; Schlimme, E.
CS Lab. Biol. Chem., Univ. Paderborn, Paderborn, Fed. Rep. Ger.

SO Symposia Biologica Hungarica (1988), 37(Chromatography '87), 87-109
AB An approach for using a coupled dual-column system for online processing and trace anal. of catecholamines and ribonucleosides succeeded in the development of the 1st fully automated **HPLC** analyzer for these compds. in highly complex and even **protein**-contg. biol. matrixes. The dual-column technique is based on a newly developed and unique column material for digital **chromatog.** and combines the selectivity of bioaffinity and **size-exclusion chromatog.** with the high resoln. and speed of anal. of **reversed-phase chromatog.** The high anal. precision and excellent long-term stability of the **HPLC** analyzer is documented by the very low intra- and interassay values of the relative std. deviation for retention times and quantitation. The broad linear measuring range covers the concns. found in normal and pathol. samples. The high accuracy, which primarily is based on the quant. and matrix-independent recovery of the investigated analytes, the practicability, and the com. availability of the **HPLC** analyzer offer the system as a powerful anal. method for investigations in the biochem. as well as in the clin. research field. Further applications of this method will be: (1) trace enrichment for the structural characterization of diol-contg. compds. in biol. **fluids**; (2) small-scale prepn. of natural diol-contg. compds.; (3) **investigation** of **disorders** in catecholamine, ribonucleoside, ribonucleotide, and(or) RNA metab.; (4) a noninvasive screening test (urinary modified ribonucleosides) for cancer in humans; (5) investigation of renal reutilization processes; and (6) therapeutic drug monitoring during nucleoside or catecholamine chemotherapy.

L37 ANSWER 366 OF 568 CA COPYRIGHT 2002 ACS
AN 107:94963 CA
TI Effect of **serum** on lymphocyte blastogenesis. 2. **Characterization** of **disease**-induced immunosuppressive factors by **chromatography** and molecular **weight** determination
AU Barta, O.; Huang, L. J.; Pourciau, S. S.; Shaffer, L. M.
CS Sch. Vet. Med., Louisiana State Univ., Baton Rouge, LA, 70803, USA
SO Veterinary Immunology and Immunopathology (1987), 14(4), 319-34
AB Numerous infectious and noninfectious diseases are assocd. with the appearance of suppressive **serum** lymphocyte immunoregulatory factors (SLIFs). The suppressive SLIFs in **sera** from clin. healthy dogs and from dogs with bacterial infections were characterized by dialysis, fractionation by ultrafiltrations and **HPLC** sieving, by affinity **chromatog.** on **protein** A-Sepharose columns, and by DEAE-cellulose ion exchange **chromatog.** Factors of various mol. **wts.** and of various elution patterns from DEAE-cellulose and affinity **chromatog.** columns were taking part in the suppressive action of the whole **serum** on lymphocyte blastogenesis. The common inhibitors present in all **sera** were in the mol. **wt.** range of 28 to 35 kilodaltons, whereas the disease-induced suppressive SLIFs were present in various mol. **wt.** categories. Common suppressor SLIFs and some SLIfs from dogs with staphylococcal infections were partially dialyzable; suppressive SLIFs induced in dogs with generalized brucellosis and blastomycosis were not dialyzable. **Protein** A bound suppressive SLIFs from 2 of 3 dogs with staphylococcal pyodermas. DEAE-cellulose **chromatog.** gave variable elution patterns with different animal **sera.** It is concluded that various suppressive SLIFs contribute to the immunosuppressive effect of the whole **serum** and no disease-specific suppressive SLIF could be identified.

L37 ANSWER 370 OF 568 MEDLINE
AN 88008071 MEDLINE
TI Separation and characterisation of glycoproteins from normal, pregnancy, and acute inflammatory **sera.**
AU Cox A M; Turner R; Cooper E H

CS Unit for Cancer Research, University of Leeds, U.K.
SO JOURNAL OF CHROMATOGRAPHY, (1987 Jun 26) 397 213-22.
AB A system of multiple **chromatography** combining anion-exchange, gel filtration, and affinity **chromatography** has been devised to separate several acute phase **proteins** from **serum**, including alpha 1 acid glycoprotein, transferrin, alpha 1-antichymotrypsin, alpha 1-antitrypsin and haemopexin. Only 5-15 ml of **blood** is required to provide milligram quantities of the purified **proteins** for further biochemical analysis. The system has been applied in a study of pregnancy and some **diseases** in order to **investigate** the changes in the **serum protein** profile and in individual **proteins**.

L37 ANSWER 372 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:67553 BIOSIS
TI RECOVERY OF **POLYPEPTIDES** AFTER **REVERSED-PHASE** HIGH-PERFORMANCE LIQUID **CHROMATOGRAPHY**.
AU WELINDER B S; SORENSEN H H; HANSEN B
CS HAGEDORN RES. LAB., DK-2820 GENTOFTE, DENMARK.
SO J CHROMATOGR, (1987) 408 (0), 191-200.
AB Mass recovery of individual **polypeptides** may be **estimated** under various practical **conditions**. With the purpose of obtaining rapid and reliable standard procedures for recovery measurements, we have compared five individual methods utilizing a silica-based stationary phase [Nucleosil C18 (7 μm)/ammonium sulphate-perchlorate-acetonitrile, pH 3.0] and a resin-based stationary phase (TSK Phenyl 5 PW RP/ammonium phosphate-acetonitrile, pH 7.0). The recoveries of insulin (6 kilodaltons), human growth hormone (22 kilodaltons) and human **serum** albumin (68 kilodaltons) **estimated** under five different experimental **conditions** were found to be concordant. Variations in column load, flow-rate, gradient shape and column dwell time and addition of cyclame did not increase the (reduced) recovery of **serum** albumin and growth hormone.

L37 ANSWER 379 OF 568 CA COPYRIGHT 2002 ACS
AN 105:796 CA
TI Two apparent human endothelial cell growth factors from human hepatoma cells are tumor-associated proteinase inhibitors
AU McKeehan, Wallace L.; Sakagami, Youji; Hoshi, Hiroyoshi; McKeehan, Kerstin A.
CS W. Alton jones Cell Sci. Cent., Inc., Lake Placid, NY, 12946, USA
SO Journal of Biological Chemistry (1986), 261(12), 5378-83
AB Two polypeptides from secretory products of human hepatoma cells were isolated and characterized on the basis of their stimulation of maintenance and growth of human endothelial cells in **serum**-free cell culture. Both factors were purified to homogeneity by a combination of **reverse-phase**, ion exchange, and mol. filtration **HPLC**. One factor (endothelial cell growth factor 2a (EDGF-2a)) had mol. **wt**. ((Mr) ~6,500 and pI near 6. The 2nd ECGF-2b had Mr = 27,000 and a pI <4.0. Both ECGF-2a and ECGF-2b exhibited single NH2-terminal sequences. The 1st 25 NH2-terminal residues of ECGF-2a and the 1st 49 residues of ECFG-2b were detd. by gas-phase microsequencing. All clearly detd. residues of ECGF-2a were identical with human pancreatic secretory trypsin inhibitor [50936-63-5]. All assignable residues of ECGF-2b were identical with urinary glycoprotein proteinase inhibitor (HI-30/EDC1) [37205-61-1]. Both **proteins** are absent or at low levels in normal **plasma** and **urine**, but appear during acute inflammatory disease and cancer. Amino acid compn. of ECGF-2a and ECGF-2b was also similar to human pancreatic secretory inhibitor and HI-30/EDC1, resp. Both ECGF-2a and ECGF-2b inhibited bovine pancreatic trypsin (2 μg/mL) by 50% at 750 ng/mL. ECGF-2a and ECGF-2b stimulated endothelial cell no. at a half-maximal dose

of 50 ng/mL (8 nM) and 80-130 ng/mL **protein**, resp. When **assayed** under identical **conditions**, no effect of either factor on human smooth muscle cells, human hepatoma cells, or human, rat, and mouse fibroblasts was detected.

L37 ANSWER 387 OF 568 CA COPYRIGHT 2002 ACS
AN 104:126053 CA
TI Detection of **serum proteins** by high-pressure gel-permeation **chromatography** with low-angle laser light scattering, compared with analytical ultracentrifugation
AU Flapper, Walter; Van den Oetelaar, Piet J. M.; Breed, Cees P. M.; Steenbergen, Jaap; Hoenders, Herman J.
CS Dep. Biochem., Univ. Nijmegen, Nijmegen, 6525 EP, Neth.
SO Clinical Chemistry (Washington, DC, United States) (1986), 32(2), 363-7
AB Human **sera** were subjected to anal. ultracentrifugation and high-pressure gel-permeation **chromatog.** on a system of combined TSK Gel G5000 PW and G3000 SW columns. The **chromatog.** method produced remarkably superior resoln. of the **proteins**, esp. those exceeding 100,000 **daltons**. The mol. masses of eluted fractions were calcd. on the basis of their detection by low-angle laser light scattering and their differential refractive index. The results are discussed in relation to clin. data obtained from patients with various diseases.

L37 ANSWER 390 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1986:366784 BIOSIS
TI **PROFILING** OF NEUROPEPTIDES USING GRADIENT REVERSED-PHASE HIGH-PERFORMANCE LIQUID **CHROMATOGRAPHY** WITH NOVEL DETECTION METHODOLOGIES.
AU FRIDLAND G H; DESIDERIO D M
CS THE CHARLES B. STOUT NEUROSCI. MASS SPECTROMETRY LAB., UNIV. OF TENN.-MEMPHIS, 800 MADISON AVE., MEMPHIS, TENN. 38163, USA.
SO J CHROMATOGR BIOMED APPL, (1986) 379 (0), 251-268.

L37 ANSWER 391 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1987:63630 BIOSIS
TI INCREASED **URINE** LEVEL OF AMINO-TERMINAL **PEPTIDE** DERIVATIVES OF TYPE III PROCOLLAGEN IN PATIENTS WITH LIVER DISEASES.
AU KOIDE N; UKIDA M; KONDO H; JITOKU M; ONO R; TANABE T; NAGASHIMA H
CS CENTRAL CLINICAL LAB., OKAYAMA UNIV. MED. SCH. HOSP., 2-5-1 SHIKATA-CHO, OKAYAMA 700, JPN.
SO ACTA MED OKAYAMA, (1986) 40 (5), 243-248.
AB The amino-terminal **peptides** of type III procollagen (PIIIP) in the **urine** of 40 patients with various liver **diseases** were **determined** with a commercial radioimmunoassay kit. The level of urinary PIIIP (uPIIIP) was correlated well with **serum** PIIIP (sPIIIP) in 9 patients, the coefficient of correlation being $r=0.836$ ($p < 0.01$) and the regression line being $y=1.42x+24$. Urinary PIIIP consisted of at least 4 different molecular species with molecular **weights** of 49 k, **18** k, 10 k and 4.6 k as estimated by column **chromatography** on Sephadex G-100. Furthermore. uPIIIP was found to be significantly elevated in acute hepatitis, chronic hepatitis, liver cirrhosis, hepatocellular carcinomas and other liver diseases, in which the elevation of sPIIIP has been reported by others. The mean values $\pm$ standard deviations of uPIIIP were 44.0 ± 32.0, 60.4 ± 32.0, 62.0 ± 46.5, 53.0 ± 27.1 and 48.1 ± 22.8 ng/ml for the respective liver diseases, and 13.2 ± 4.5 for the non-hepatic disease group.

L37 ANSWER 392 OF 568 CA COPYRIGHT 2002 ACS
AN 106:15287 CA
TI Glycoprotein analysis of middle ear effusions by rectin-conjugated

Sepharose affinity **chromatography**
AU Sakakura, K.; hamaguchi, Y.; Majima, Y.; Ukai, K.; Sakakura, Y.
CS Sch. Med., Mie Univ., Tsu, 514, Japan
SO Archives of Oto-Rhino-Laryngology (1986), 243(4), 224-8
AB The compn. of glycoproteins in serous and mucoid middle ear effusions (MEE) collected from patients with chronic otitis media with effusion was analyzed and compared with **plasma** glycoproteins, using rectin-conjugated Sepharose. The concn. ratio of rectin-absorbed glycoproteins to total **protein** concn. in serous MEE resembled that in **plasma**, although mucoid MEE had a higher concn. ratio than that of the serous effusions. By SDS-polyacrylamide gel electrophoresis anal., the mol. **wt**. pattern of glycoproteins adsorbed to wheat germ agglutinin gel in serous MEE was more similar to that in **plasma** than in the mucoid effusions. Using 2-mercaptoethanol, the basic low-mol.-**wt**. components of the glycoproteins were almost identical in MEE and **plasma**. Mucoid MEE has a greater amt. of **plasma** and epithelial glycoproteins than does serous **fluid**. The compn. of these latter substances is more similar to that of **plasma** glycoproteins. The strong disulfide bonds present in glycoproteins may significantly contribute to the physicochem. properties. of mucoid MEE.

L37 ANSWER 404 OF 568 CA COPYRIGHT 2002 ACS
AN 104:166217 CA
TI Human placental anemia-inducing factor and its clinical application
AU Inoue, Shigeaki; Itoh, Takao; Fujita, Masahiro; Endoh, Masaaki; Munakata, Hirofumi; Konn, Mitsuru
CS Sch. Med., Hirosaki Univ., Hirosaki, Japan
SO Hirosaki Igaku (1985), 37(4), 705-20
AB A placental anemia-inducing factor (PAIF) was obtained by **chromatog**. on DEAE-cellulose, CM-cellulose, and Sephadex G-75 from an anemia-inducing fraction extd. from human placentas. The purified PAIF is a glycoprotein with a mol. **wt**. of ~20,000; the **protein** moiety comprised <43%. RIA revealed that the level of anemia-inducing factor (AIF) in the **serum** of patients with malignant tumors was high compared with that of those with any other benign diseases. No cross-reactions were found between α-fetoprotein, carcinoembryonic antigen, and PAIF, whereas an anemia-inducing fraction from cancerous **serum** cross-reacted with PAIF. Evidently, measurement of the AIF content in **sera** of patients with various **diseases** is a new **diagnostic** and therapeutic aid.

L37 ANSWER 406 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1985:342114 BIOSIS
TI HIGH-PRESSURE LIQUID **CHROMATOGRAPHIC** SEPARATION OF AN OXYTOCIN-ARGININE VASOTOCIN-LIKE **PEPTIDE** FROM THE **PLASMA** OF PATIENTS WITH CHRONIC RENAL FAILURE.
AU AMICO J A; DOLL R B JR; FINN F M; ERVIN M G; LEAKE R D; FISHER D A; ROBINSON A G
CS 931 SCAIFE HALL, UNIV. PITTSB. SCH. MED., PITTSBURGH, PA 15261.
SO J CLIN ENDOCRINOL METAB, (1985) 60 (4), 644-650.
AB **Levels** of a novel oxytocin (OT)- and arginine vasotocin (AVT)-like **peptide** detected by one antiserum to OT (Pitt Ab-1) and 1 antiserum to AVT (Tor AVT) were recently found to rise in human **plasma** in response to administration of estrogen. The novel **peptide** rose in parallel with the estrogen-stimulated neurophysin (ESN). The mean **level** (± SEM [standard error of the mean]) ESN in **plasma** of 11 individuals with altered renal function (nondialyzed) was significantly higher than the **level** in individuals with normal renal function (4.2 ± 0.9 vs. 1.1 ± 0.04 ng/ml; $P < 0.01$). In patients treated with hemo- or peritoneal dialysis, mean (± SEM) **levels** of ESN were 18.1 ± 3.2 and 16.8 ± 3.7 ng/ml, respectively. **Levels** of

estradiol and estrone were not elevated and did not correlate with high **levels** of ESN. **Levels** of OT Pitt Ab-1, AVT, and ESN immunoreactivity were measured in **plasma** from 9 patients undergoing hemodialysis and 8 patients undergoing peritoneal dialysis. Mean (± SEM) **levels** of all 3 **peptides** were elevated (12.9 ± 1.5 μU/ml, 32.1 ± 6.7 pg/ml, and 13.5 ± 4.0 ng/ml, respectively), ESN was significantly correlated with OT Pitt Ab-1 and AVT ($R2 = 0.80$; $P < 0.001$). **Plasma** samples from the same patients were pooled, treated, and separated by **reverse phase** high-pressure liquid **chromatography**. The **plasma** contained a peak of immunoreactivity detected by Pitt Ab-1 and Tor AVT Ab. The position of the material was distinct from that of synthetic OT, AVT, or AVP and corresponded to the position of the novel OT-like **peptide** found in **plasma** of individuals given estrogen. The fingings support parallel secretion of the OT-like **peptide** with ESN and represent the first **disease** state **characterized** by high **levels** of this OT- and AVT-like **peptide**.

L37 ANSWER 408 OF 568 CA COPYRIGHT 2002 ACS
AN 104:65005 CA
TI An automated tandem **HPLC** system applied to **peptide** mapping of human **plasma proteins**
AU Takahasi, Nobuhiro; Takahashi, Yoko; Ishioka, Noriaki; Heiny, Mark E.; Putnam, Frank W.
CS Dep. Biol., Indiana Univ., Bloomington, IN, 47405, USA
SO Protides of the Biological Fluids (1985), 33, 541-4
AB An automated tandem **HPLC** system was developed for **peptide** mapping of very large **proteins**. The method is based on introducing the eluate from the 1st column (anion-exchange) directly into the 2nd (**reversed- phase**)column. The system consists of 2 **HPLC** assemblies with programmed elution by controllers. The system was applied to **peptide** mapping anal. of ceruloplasmin, **serum** albumin, and heavy-chain disease **proteins**.

L37 ANSWER 424 OF 568 CA COPYRIGHT 2002 ACS
AN 101:51177 CA
TI Analysis of **dipeptides** in **urine** by gas **chromatography/mass spectrometry**: implications for collagen breakdown in iminodipeptiduria following a study of the **dipeptides** by electron impact and chemical ionization
AU Charpentier, Christiane; Johnstone, Robert A. W.; Lemonnier, Alain; Myara, Isaac; Rose, Malcolm E.; Tuli, Deepak
CS Lab. Biochim., Hop. Bicetre, Kremlin Bicetre, 94270, Fr.
SO Clinica Chimica Acta (1984), 138(3), 299-308
AB **Dipeptides** in the **urine** of a patient suffering from dermatol. purpura assocd. with iminodipeptiduria were detd. by gas **chromatog./mass spectrometry** as N,O-peracetyl **dipeptide** Me esters. The **dipeptides** were identified as R-proline and R'-hydroxyproline were R is any 1 of the residues, glycyl, alanyl, valyl, leucyl, isoleucyl, seryl, aspartyl, glutamyl, prolyl, phenylalanyl and R' is alanyl, valyl, leucyl or isoleucyl, seryl, prolyl, glutamyl, phenylalanyl. The predominance of proline- and hydroxyproline-contg. **dipeptide** and the percentage distributions of the other amino acid residues, R and R', strongly implicate an abnormality of collagen metab. Structural assignments are confidently based on (a) gas **chromatog**. retention times; (b) electron-impact mass spectra and automatic comparison with ref. to spectra stored in a specialized library; (c) chem.-ionization mass spectra with isobutane and MeOH as reactant gases; and (d) the use of deuterated Ac2O as derivatizing agent.

L37 ANSWER 427 OF 568 CA COPYRIGHT 2002 ACS
AN 102:58251 CA

TI Enzyme antigens associated with pigeon breeder's **disease**. I. Isolation and **characterization** of basic hydrolases
AU McCormick, Daniel J.; Tebo, Thomas H.; Calvanico, Nickolas J.; Fredricks, Walter W.
CS Dep. Biol., Marquette Univ., Milwaukee, WI, USA
SO Journal of Protein Chemistry (1984), 3(3), 293-308
AB A survey of the hydrolytic enzymes present in pigeon dropping exts. (PDE) has shown that this material contains a variety of proteolytic and nonproteolytic activities. These enzymes were sepd. into their basic and acidic components by **chromatog**. on DEAE-cellulose. Staining of immunoppts. with specific chromogenic substrates demonstrated the presence of antibodies in symptomatic breeders to several of the basic enzymes in PDE. Five distinct hydrolytic activities were isolated from the basic group of enzymes. Trypsin, elastase, and 2 forms of collagenase were the specific proteolytic activities isolated. A phospholipase was also purified from these prepns. Purified elastase consisted of a single **polypeptide** chain (mol. **wt**. 22,000). Purified trypsin had a mol. **wt**. of 25,000 and a charge similar to the 2 reported for elastase. Like elastase, trypsin from PDE was apparently composed of a single **polypeptide** chain. The 2 mol. **wt**. forms of collagenase both hydrolyzed bovine collagen. High-mol.-**wt**. (51,000) collagenase was a glycoprotein consisting of 2 **polypeptides** (mol. **wt**. 24,000), and was readily sepd. from low-mol.-**wt**. (15,000) collagenase by gel filtration. The phospholipase (mol. **wt**. 99,000) was apparently a dimer. The relevance of these enzymes to the development of pigeon breeder's disease is discussed.

L37 ANSWER 440 OF 568 CA COPYRIGHT 2002 ACS
AN 101:204425 CA
TI Analysis of immunoreactive and biologically active human parathyroid hormone **peptides** by high-performance-liquid-**chromatography**
AU Schettler, T.; Aufm'Kolk, B.; Atkinson, M. J.; Radeke, H.; Enters, C.; Hesch, R. D.
CS Abt. Klin. Endokrinol., Med. Hochsch., Hannover, D-3000/61, Fed. Rep. Ger.
SO Acta Endocrinol. (Copenhagen) (1984), 107(1), 60-9
AB A combination of **HPLC**, sensitive RIA, and a homologous in vitro bioassay was used to characterize human parathyroid hormone (PTH) [9002-64-6] **peptides** in human parathyroid adenoma and **plasma**. **Chromatog**. of several synthetic PTH **peptides** allowed the calibration of the **HPLC** column. On the basis of sequence hydrophobicity the elution position of **peptides** was predicted. A model for the detn. of the minimal **peptide** sequence of each **peptide** was developed which, based on immunol. and physicochem. properties, allows the characterization of unknown hPTH **peptides**. Using this technique the heterogeneity of circulating PTH **peptides** in human **plasma** was examd. **Plasma** exts. from healthy individuals, osteoporotic, hyperparathyroid, and pseudohyperparathyroid patients were investigated. A uniform pattern in the heterogeneity of PTH **peptides** was detected. Using parathyroid adenoma as ref. **disease** specific changes were **characterized**.

L37 ANSWER 449 OF 568 MEDLINE
AN 83285810 MEDLINE
TI Molecular markers of hemostatic **disorders**: implications in the **diagnosis** and therapeutic management of thrombotic and bleeding disorders.
AU Fareed J; Bick R L; Squillaci G; Walenga J M; Bermes E W Jr
SO CLINICAL CHEMISTRY, (1983 Sep) 29 (9) 1641-58.
AB With current technological advances, it is now possible to measure in less than 50 microL of **plasma** picomolar amounts of circulating products of platelet activation, products of protease activation related to coagulation and fibrinolytic pathways, and prostaglandin metabolites formed during a

physiologic or pathologic process. Most of these markers, which circulate in **blood** in nanogram or picogram amounts per milliliter during or after pathologic activation, provide pertinent information on the status of a patient in terms of specificity and early detection, and will be of crucial value in the diagnosis of hemostatic defects and the management of newer antithrombotic drugs that cannot be monitored by currently available assays. Currently, 125I- and 3H-based simple radioimmunoassays are available for platelet factor 4, beta-thromboglobulin, fibrinopeptide A, B beta 15-42 related **peptides**, thromboxane B2, and the prostaglandins 6-keto-PGF1 alpha and PGE2. Nonisotopic methods such as enzyme-linked immunosorbent assays and fluoroimmunoassays are being developed. Serotonin and ADP, products of platelet activation, are measurable by liquid-**chromatographic**, immunoenzymatic, and spectrophotofluorometric methods. Analytical methods for fibrin split products (fragments D and E) and serine protease inhibitor complexes such as thrombin-antithrombin-III, factor Xa-antithrombin-III, and kallikrein-C1-esterase are also being developed. We have evaluated all of these methods and found them to be very sensitive to those components of endogenous activation of the hemostatic system listed above.

*L37 **ANSWER 453 OF 568*** CA COPYRIGHT 2002 ACS
AN 99:136424 CA
TI Urinary excretion of biologically active **peptides** and/or **peptide**-like material in various disorders
AU Johansen, John H.; Boeler, Jan B.; Reichelt, Karl L.; Edminson, Paul D.; Pape, Nils K.
CS Pediatric Res. Inst., Univ. Hosp., Oslo, Norway
SO Pept., Proc. Eur. Pept. Symp., 17th (1983), Meeting Date 1982, 613-16. Editor(s): Blaha, Karel; Malon, Petr. Publisher: de Gruyter, Berlin, Fed. Rep. Ger.
AB Biol. active **peptides** and peptidelike substances were detected, sepd., and characterized in the **urine** of patients with various disorders (e.g., schizophrenia, allergy, asthma). The methods include pptn. with EtOH-BzOH, **chromatog**. on Sephadex G 25 (and other types of columns), and characterization (e.g., sequence detn., chem. synthesis).

L37 ANSWER 456 OF 568 MEDLINE
AN 84097572 MEDLINE
TI Impact of automation on the quantitation of low molecular **weight** markers of hemostatic defects.
AU Fareed J; Walenga J M; Bick R L; Bermes E J Jr; Messmore H L Jr
SO SEMINARS IN THROMBOSIS AND HEMOSTASIS, (1983 Oct) 9 (4) 355-79. Ref: 167
AB Through in depth studies, the biochemical pathways of hemostasis-related systems have been elucidated in terms of well-defined molecular mechanisms. The interrelationships of coagulation, fibrinolytic, kallikrein-kinin, platelets, prostaglandins, **blood** vessel, and complement systems are now well understood. Methods are currently developed to quantitate the molecular markers of each of these systems and define the involvement of each in disease and drug-related aberrations. Molecular markers allow for very early **detection** of **disease** states well before clinical manifestations are seen or current coagulation methods are affected. Therefore prophylactic or therapeutic treatment can begin before a disease state causes damage. Platelet factor 4 and beta-thromboglobulin are low molecular **weight proteins** released from the light (alpha) granules of platelets and provide a reliable index of endogenous activation and consumption of platelets. Serotonin and ADP are released during activation from the beta-granules and can be measured by high-performance liquid **chromatography**. Fibrinopeptide A is a molecular marker of the activation of the coagulation

process and provides a useful index of the action of thrombin on fibrinogen. Elevated levels of this **peptide** are found in patients with hypercoagulable states or a thrombotic tendency. B beta 15-42 **peptides** are released at the early stages of fibrinolysis and are a useful collective parameter for the measurement of the activation of fibrinolysis. In both the primary and secondary fibrinolytic disorders this **peptide** is elevated. Circulating kinins provide information on the activation of the kallikrein system and are useful in monitoring coagulation and shock related disorders. Arachidonic acid metabolites, such as thromboxanes and prostacyclins, are products of platelet and vascular endothelium interactions. Their measurement in peripheral **blood** provides a useful tool to measure the vascular and platelet-related thrombotic defects. Furthermore, antiplatelet therapy can be monitored using these parameters. Numerous other metabolites of arachidonic acid such as the leukotrienes and PAFs also are generated in various immunopathologic disorders associated with hemostatic activation. Unlike the other coagulant tests, the measurement of molecular markers in native **blood** or **plasma** samples provides a true picture of the endogenous physiology. Since no activator or additive is added to influence the test, these markers provide the most relevant information on the pathophysiologic condition. Since most of these markers are **proteins** or low molecular **weight** products, isotopic and nonisotopic immunoassays, high performance liquid **chromatography** and fluorometric methods can be used to analyze their levels. Furthermore, multiple panels can be developed to profile various pathologic states.(ABSTRACT TRUNCATED AT 400 WORDS)

L37 ANSWER 459 OF 568 CA COPYRIGHT 2002 ACS
AN 99:16686 CA
TI **Peptide** studies using a fast atom bombardment high field **mass spectrometer** and data system. 1. Sample introduction, data acquisition and mass calibration
AU Buko, Alexander M.; Phillips, Lawrence R.; Fraser, Blair A.
CS Natl. Cent. Drugs Biol., Food Drug Adm., Bethesda, MD, 20205, USA
SO Biomed. Mass Spectrom. (1983), 10(5), 324-33
AB **Conditions** were established for **analyzing** as little as 5 pmol of an underivatized **peptide** delivered in a glycerol sample matrix as a thin film onto a Au-plated Cu sample stage and then bombarded with Xe fast atoms. Calibration of the fast atom bombardment high field **mass spectrometer** and data system was achieved using cesium iodide-glycerol as a ref. Calibration at several accelerating potentials permitted a mass range of 393-5941. Several factor were examd. that contribute to the quality of the mass spectrum: components within the glycerol such as other **peptides**, alkali salts, acid, and reducing agents; the nature of the fast atom gas; concn. of the **peptide** delivered to the sample stage; and the effect of the sample stage and sample matrix on sensitivity. The technique was illustrated with studies on human angiotensin I [484-42-4], human gastrin I [10047-33-3], and **serum** thymic factor [63958-90-7].

L37 ANSWER 461 OF 568 CA COPYRIGHT 2002 ACS
AN 98:157297 CA
TI Urinary **peptides** in rheumatic diseases. Separation by **reversed-phase** high-performance liquid **chromatography**
AU Tellerova, Katerina; Spacek, Pavel; Adam, Milan
CS Res. Inst. Rheum. Dis., Prague, 128 50, Czech.
SO J. Chromatogr. (1983), 273(1), 197-201
AB Hydroxyproline-contg. **peptides** with mol. **wts**. >4000 were sepd. from the **urine** of normal subjects and patients with osteoarthrosis and rheumatoid arthritis by **reversed-phase** high-performance liq. **chromatog**. (**HPLC**) with UV

detection, following fractionation on Bio-Gel P-4 and elution with 0.01M aq. NaCl. **HPLC** was carried out on a Separon Si C 18 column and isocratic elution was with phosphate buffer, pH 2.63, contg. 25% MeOH. Differences in the **chromatog**. patterns were found not only between controls and osteoarthrosis patients, but also between osteoarthrosis and rheumatoid arthritis patients. The method could be useful in the treatment of degenerative joint **diseases**, but further **investigations** are necessary.

L37 ANSWER 462 OF 568 MEDLINE
AN 84032828 MEDLINE
TI Analysis of enkephalins, beta-endorphins and small **peptides** in their sequences by highly sensitive high-performance liquid **chromatography** with electrochemical detection: implications in opioid **peptide** metabolism.
AU Mousa S; Couri D
SO JOURNAL OF CHROMATOGRAPHY, (1983 Sep 2) 267 (1) 191-8.
AB Sensitivity in the 10-100 pg range for enkephalins, beta-endorphin, tyrosine (T), 12 tyrosylglycine (T-G) and tyrosylglycylglycine (T-G-G) was attained by using a high-performance liquid **chromatographic** (**HPLC**) method with electrochemical detection which is at least 100 times more sensitive than **HPLC** with UV **detection**. The **chromatographic conditions** on a **reversed-phase** C18 silica column were 50 mM sodium phosphate buffer (pH 2.1) (A) in acetonitrile-methanol (1:1) (B), isocratic mixture, flow-rate 0.6-1 ml/min, UV detection at 205 nm, electrochemical oxidation potential + 1.25 V. The separation of T, T-G and T-G-G was obtained by using 10% B while the separation of the pentapeptide, enkephalins required 40% B. Separation of enkephalins from beta-endorphin was attained at a shorter retention times did not exceed 15 min. This method can be used to determine tissue levels and pharmacodynamics of enkephalins and beta-endorphin. A highly specific measurement of the different enzymes involved in the metabolism of enkephalin has been achieved.

L37 ANSWER 475 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1983:212110 BIOSIS
TI ADAPTATION OF **REVERSE PHASE** HIGH PERFORMANCE LIQUID **CHROMATOGRAPHY** FOR THE ISOLATION AND SEQUENCE ANALYSIS OF **PEPTIDES** FROM **PLASMA** AMYLOID P COMPONENT.
AU ANDERSON J K; MOLE J E
CS DEP. BIOCHEMISTRY, UNIV. MASSACHUSETTS MED. SCH., WORCESTER, MASS. 01605.
SO ANAL BIOCHEM, (1982) 123 (2), 413-421.
AB Gel permeation and **reverse-phase** high-performance liquid **chromatography** [**HPLC**] were used to isolate chemical and enzymatic cleavage fragments of [human] **plasma** amyloid P-component for amino acid sequence **analysis**. Optimal **conditions** for resolution of **peptide** mixtures were predetermined using analytical amounts (0.04-0.1 nmol) and volatile trifluoroacetic acid-acetonitrile or ammonium acetate-acetonitrile buffer systems. Thereafter, 100-200 nmol of each hydrolyzate was **chromatographed** on preparative columns. **Size-exclusion chromatography** using an acetic acid solvent containing n-propanol was most useful for large-molecular-**weight** cyanogen bromide **peptides** while **reverse-phase chromatography** was best suited for the smaller enzymatically derived **peptides**. The high resolution and sensitivity of **HPLC** using this dual approach enabled the completion of greater than 95% of the sequence of P-component (**MW** 23,500) using less than 10 mg.

L37 ANSWER 477 OF 568 CA COPYRIGHT 2002 ACS
AN 96:140767 CA
TI Analysis of small **peptides** in uremic **serum** by high-performance liquid **chromatography**
AU Mabuchi, Hisao; Nakahashi, Hisamitsu

CS Dep. Intern. Med. Nephrol., Nishijin Hosp., Kyoto, 602, Japan
SO J. Chromatogr. (1982), 228, 292-7
AB **Peptides** from **serum** samples from 6 uremic patients on maintenance hemodialysis and 4 healthy subjects were analyzed. High-performance gel **chromatog**. showed that **peptides** with mol. **wts**. below 1,000 were increased in uremic **serum**; **peptides** with mol. **wts**. above 1,000 were not increased. **Peptides** with mol. **wts**. below 1,000 were not detected using ion-pair **reversed-phase** high-performance liq. **chromatog**.

L37 ANSWER 479 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1983:165376 BIOSIS
TI URINARY **PROTEIN** PROFILING BY HIGH PERFORMANCE GEL PERMEATION **CHROMATOGRAPHY**.
AU RATGE D; WISSER H
CS DEP. CLIN. CHEM., ROBERT-BOSCH-KRANKENHAUS, AUERBACHSTR. 110, STUTTGART, GFR.
SO J CHROMATOGR BIOMED APPL, (1982) 230 (1), 47-56.
AB A new application of high-performance aqueous gel permeation **chromatography** is described for the analysis of human proteinuria. Separations of urinary **proteins** from normal subjects and patients with renal impairment were performed with [silica gel] TSK G 3000 SW columns. The effects of pH and ionic strength of the eluent on the separation of urinary **proteins** were investigated. Albumins were selectively separated from **urine** by affinity **chromatography** on Blue Sepharose CL-6B. According to the results of clinical investigations, urinary **protein** pattern derived from gel permeation **chromatography** revealed a good prediction of the site of renal involvement. Predominant excretion of **proteins** with lower **MW** than albumin correlated with tubular damage. Albumin and higher **MW protein** patterns were associated with glomerular **disease**. Absorbance **measurements** of the eluent at 280 nm were used for quantitative determination of total urinary **protein**. Gel permeation **chromatography** was compared to sodium dodecyl sulfate-polyacrylamide gel electrophoresis and the resulting **protein** patterns are in good agreement.

L37 ANSWER 492 OF 568 CA COPYRIGHT 2002 ACS
AN 96:16835 CA
TI Cystinylglycine in **plasma**: diagnostic relevance for pyroglutamic acidemia, homocystinuria, and phenylketonuria
AU Perry, Thomas L.; Hansen, Shirley
CS Dep. Pharmacol., Univ. British Columbia, Vancouver, BC, V6T 1W5, Can.
SO Clin. Chim. Acta (1981), 117(1), 7-12
AB Cystinylglycine (I) was detd. in **blood plasma** by cation-exchange **chromatog**., and its diagnostic value for several genetically **detd**. **disorders** was **assessed**. I was absent from the **plasma** of a patient with pyroglutamic acidemia, and the **peptide** was either absent or greatly reduced in **plasma** from patients with homocystinuria. In the latter disorder, a different small **peptide** replaced I. It was identified as the mixed disulfide of homocysteine and cysteinylglycine. The mean **plasma** concn. of I was 13.6 μmol/L in adult control subjects, and concns. of the mixed disulfide of homocysteine and cysteinylglycine ranged 2-10 μmol/L in the **plasma** of homocystinuric patients. Failure to sep. I from phenylalanine with many rapid amino acid analyzer systems can lead to a misclassification of persons as heterozygotes for the phenylketonuria gene when heterozygosity testing is based on the phenylalanine/tyrosine molar ratio in fasting **plasma**.

L37 ANSWER 493 OF 568 CA COPYRIGHT 2002 ACS
AN 93:91556 CA

TI Glycoproteins and sugar **peptides** for clinical analysis
IN Shibata, Seiichi
PA Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
PI JP 55037944 A2 19800317 JP 1978-111020 19780909
AB Nondialyzable, glucose-contg. glycoproteins or glycopeptides are isolated from normal **urine** for use in clin. anal. for the **diagnosis** of renal **disease**. Thus, **urine** (300 L) from normal subjects was concd., dialyzed, and freeze dried to give 1 g powd. product. The powder was dissolved in a small amt. of water, and the soln. was adjusted to pH 8.0 with 0.1M Na borate, treated with 0.5% trypsin at 37° for 3 h and then at 60° for 30 min. After centrifugation, the supernatant was dialyzed and freeze dried to produce glycoproteins, which were dissolved in a small amt. of saline, and the soln. was adjusted to pH 7.4 with 0.1M Tris-acetate buffer. The soln. was treated with collagenase and then Pronase, centrifuged, and the supernatant was freeze dried to give glycopeptides. The obtained glycoproteins or glycopeptides were subjected to zone electrophoresis, and the active fractions were eluted and treated with 5% TCA. After removal of the ppt., the supernatant was desalted and **chromatographed** on a Bio-Gel P 300 column to give products for use in clin. anal.

L37 ANSWER 495 OF 568 CA COPYRIGHT 2002 ACS
AN 94:45291 CA
TI Identification of somatomedin-like polypeptides produced by mammary tumors of BALB/c mice
AU Knauer, D. J.; Lyer, A. P.; Banerjee, M. R.; Smith, G. L.
CS Sch. Life Sci., Univ. Nebraska, Lincoln, NE, 68588, USA
SO Cancer Res. (1980), 40(12), 4368-72
AB A transplantable mammary tumor induced by 7,12-dimethylbenz[a]anthracene in cultures of whole mammary gland produced a family of somatomedin-like polypeptides when cultured in vitro. Minced mammary tumor tissue as well as monolayer cultures of tumor cells produced similar polypeptides when incubated in **serum**- and hormone-free medium. The polypeptides released into the medium ranged in mol. **wt**. from 7000 to 20,000 **daltons** as detd. by Sephadex G-50 **chromatog**. under acidic **conditions** and **anal**. gel electrophoresis in acetic acid - urea. The 7000-**dalton** polypeptides were partially purified and characterized. This prepn. stimulated DNA synthesis in chicken embryo fibroblast cultures and competed for the binding of 125I-labeled multiplication-stimulating activity to these cells. The binding of 125I-labeled epidermal growth factor to the surface of mouse embryo fibroblasts was not affected.

L37 ANSWER 497 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1981:158901 BIOSIS
TI NEW BIOCHEMICAL MARKER FOR BONE METABOLISM MEASUREMENT BY RADIO IMMUNOASSAY OF BONE GAMMA CARBOXY GLUTAMIC-ACID CONTAINING **PROTEIN** IN THE **PLASMA** OF **NORMAL** SUBJECTS AND PATIENTS WITH BONE DISEASE.
AU PRICE P A; PARTHEMORE J G; DEFTOS L J
CS DEP. BIOL., UNIV. CALIF., SAN DIEGO.
SO J CLIN INVEST, (1980) 66 (5), 878-883.
AB γ-Carboxyglutamic acid-containing **protein** of bone (BGP) is an abundant noncollagenous **protein** of mammalian bone. BGP has an **MW** of 5800 and contains 3 residues of the vitamin K-dependent amino acid, γ-carboxyglutamic acid. A radioimmunoassay based on calf BGP was applied for the measurement of the **protein** in the **plasma** of 109 normal humans and 112 patients with various bone diseases. BGP in human **plasma** was indistinguishable from calf BGP by assay dilution studies and gel permeation **chromatography**. The mean (± SE) concentration of BGP in normal

subjects was 6.78 (± 0.20) ng/ml, 7.89 (± 0.32) for males and 4.85 (± 0.35) for females. **Plasma** BGP was increased in patients with Paget's disease of bone, bone metastases, primary hyperparathyroidism, renal osteodystrophy and osteopenia. **Plasma** BGP did correlate with **plasma** alkaline phosphatase (AP) in some instances, but there were dissociations between the two. Patients with liver disease had normal **plasma** BGP despite increased **plasma** AP, a reflection of the lack of specificity of AP **measurements** for bone **disease**. Radioimmunoassay of **plasma** BGP can be a useful and specific procedure for **evaluating** the patient with bone **disease**.

L37 ANSWER 500 OF 568 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1980:217941 BIOSIS
TI HIGH PERFORMANCE LIQUID **CHROMATOGRAPHIC** ANALYSIS OF OLIGO SACCHARIDES AND GLYCO **PEPTIDES** ACCUMULATING IN LYSOSOMAL STORAGE DISORDERS.
AU KIN N M K N Y; WOLFE L S
CS DEP. NEUROCHEM., MONTREAL NEUROL. INST. HOSP., MCGILL UNIV., 3801 UNIVERSITY ST., MONTREAL, QUE. H3A 2B4, CAN.
SO ANAL BIOCHEM, (1980) 102 (1), 213-219.
AB A high-performance liquid **chromatography** method was developed to separate oligosaccharides and glycopeptides which accumulate in the [human] liver and are excreted in the **urine** of a number of lysosomal storage **disorders**. **Characteristic** elution **profiles** were obtained for oligosaccharides, their borohydride reduced products and glycopeptides in mannosidosis, fucosidosis, GM1-gangliosidosis, GM2-gangliosidosis variant 0, sialidosis and aspartylglucosaminuria. **Chromatographic** separations could be completed in 20 min.

L37 ANSWER 507 OF 568 CA COPYRIGHT 2002 ACS
AN 91:153708 CA
TI The application of gel filtration and specific analyses of urinary carbohydrate and **protein** material to the **diagnosis** of metabolic **disorders**
AU White, C. A.; Kennedy, J. F.
CS Inst. Ment. Subnorm., Lea Castle Hosp., Kidderminster/Worcs., DY10 3PP, Engl.
SO Clin. Chim. Acta (1979), 95(2), 381-9
AB A gel filtration method developed for urinary carbohydrate and proteinaceous material based on Bio-Gel P 2 cross-linked polyacrylamide gel has been coupled to specific continuous automated analyses for neutral and acidic carbohydrate and **protein**. The multichannel anal. system has been applied to **urine** from normal subjects and from known cases of genetic hyperglycosaminoglycanuria (mucopolysaccharidosis) to analyze not only the nondialyzable, high-mol.-**wt**. material but also the low-mol.-**wt**. material which comprises >90% of **urine** solutes in many cases. **Urine** from affected patients was easily distinguished from that from normal subjects and the method also differentiated between various syndromes. For the Morquio syndrome with mucopolysaccharidoria and Scheie syndrome, the ratio of acidic-to-neutral carbohydrate (carbazole-to- cysteine ratio) in the high-mol.-**wt**. material was the lowest (<0.6) whereas for the Hunter syndrome the value was >2.0, with values for Hunter and Sanfilippo syndromes being intermediate. The ratio of high-to-low mol. **wt**. material for the Morquio syndrome with mucopolysaccharidoria in the case of the borate-carbazole assay was lower (<0.2) but in the case of the L-cysteine-H2SO4 assay was higher (>0.6) than values obtained for the other syndromes. There was evidence for a division within the Sanfilippo syndrome using this mol. size ratio for the L-cysteine-H2SO4 assay, some with values >0.5 and some with values <0.3. In **urine** from cases of Morquio syndrome with mucopolysaccharidoria there was also evidence of large amts. of intermediate mol. **wt**. material. The application of this method to studies

of other disorders of inherited metab. is equally possible and is discussed.

L37 ANSWER 509 OF 568 MEDLINE
AN 79190605 MEDLINE
TI Diagnostic significance of SDS-PAA-electrophoresis of urinary **proteins**: different forms of proteinuria and their correlation to renal diseases.
AU Boesken W H
SO CURRENT PROBLEMS IN CLINICAL BIOCHEMISTRY, (1979) (9) 235-48.
AB Different types of urinary **protein** excretion may be recognized by determination of the **proteins** molecular **weight**. Beside **chromatography** different electrophoretic procedures have been applied to urinary **proteins** to study the underlying renal disease. The various zone electrophoreses separate merely by surface charge, **proteins** however covered by sodium dodecyl sulfate (SDS) migrate according to their molecular radius. So by SDS-polyacrylamide electrophoresis (SDS-PAe) macromolecular proteinurias (Mr 60,000- greater than 300,000 **daltons**) due to glomerular damage may be distinguished from micromolecular forms (Mr 10,000-70,000 d) due to tubular dysfunction. By densitometric quantitation of the separated Ig and transferrin an index of the glomerular selectivity is obtained, i.e. the capacity of the glomerular system, to retain **serum proteins** of a Mr above 150,000 d. By this procedure proliferative and degenerative glomerulopathies may be distinguished from minimal change disease, focal glomerular sclerosis and early membranous nephropathy; serial determinations of this selectivity index in the latter two disease entities show a gradual deterioration of glomerular **protein** handling with time. A glomerular proteinuria of even "physiological" quantity has been proved as early sign of renal involvment in systemic **diseases**; it may be **detected** earlier as for example the retinopathy in juvenile diabetics. Micromolecular proteinurias also occur at least in two forms: the typical tubular proteinuria (**MW** 10,000-70,000 d) is associated with acute or chronic severe tubular dysfunction as in interstitial nephritis and acute kidney failure; rejection episodes of kidney transplants lead to transient tubular proteinurias, too. The second form of micromolecular proteinuria (Mr 40,000-70,000 d) has been found frequently in association with a glomerular in diabetic and hypertensive glomerulosclerosis. By measuring clearances of the microproteins, the proteinuria with this pattern could be established as form independant from glomerular and tubular proteinurias. The constancy of the two micromolecular proteinurias led to the hypothesis of at least two selective mechanism of tubular **protein** resorption. SDS-PAe additionally allows the differentiation of extrarenal proteinurias, as caused by overflow, paraproteins, postrenal Ig-secretion or bleeding etc. In comparing clinical and in part histological data of about 2,000 patients suffering from kidney **diseases** the **analysis** of urinary **proteins** by this method has been proved as valuable non-invasive tool for diagnosis and follow-up.

L37 ANSWER 510 OF 568 CA COPYRIGHT 2002 ACS
AN 91:2017 CA
TI Hydrophobic high-performance liquid **chromatography** of hormonal polypeptides and **proteins** on alkylsilane-bonded silica
AU O'Hare, M. J.; Nice, E. C.
CS Ludwig Inst. Cancer Res., Royal Marsden Hosp., Sutton/Surrey, SM2 5PX, Engl.
SO J. Chromatogr. (1979), 171, 209-26
AB Thirty-two hormonal polypeptides and 9 **proteins** (8000-65,000 **daltons**) were used to evaluate the potential of high-performance liq. **chromatog.** on alkylsilane-bonded silica for sepg. and recovering biol. active compds. of

this type. The basic method was gradient elution with acetonitrile in an acid phosphate buffer. Variation of key **chromatog.** parameters demonstrated that low pH (<4.0) and high buffer molarity (>0.1M) are mandatory for reproducible high-efficiency polypeptide **chromatog.** Simple NaCl-HCl mixts. of appropriate acidity and molarity could be substituted for the acid phosphate buffer, with the advantage of minimizing nonphysiol. ion contributions to eluted materials. Minor selective effects were noted with different org. modifiers, but variation of other parameters, including choice of specific alkylsilane packings, did not materially influence sepns. Under optimal **conditions**, all of the polypeptides **tested** could be **chromatographed** efficiently, and many simultaneously resolved, as could most of the **proteins** tested. Three of the more hydrophobic **proteins** could not, however, be eluted from the alkylsilane packings. Retention orders of small compds. (<15 residues) generally correlated with the sum of the Rekker fragmental consts. of their strongly hydrophobic residues. Larger polypeptides showed numerous anomalies when ranked by this means, however, limiting its predictive value. The sepn. of ≥18 discrete components from a partially purified posterior pituitary ext. demonstrated the capability of alkylsilane-type **reversed-phase** packings for the hydrophobic high-performance liq. **chromatog.** of complex biol. mixts.

L37 ANSWER 516 OF 568 CA COPYRIGHT 2002 ACS
AN 90:119221 CA
TI Studies on the **pathogenesis** of coma hepaticum; **detection** of a "middleweight" **peptide**
AU Leber, H. W.; Goubeaud, G.; Pohlreich, J.; Schuetterle, G.
CS Zent. Inn. Med., Univ. Giessen, Giessen, Ger.
SO Verh. Dtsch. Ges. Inn. Med. (1978), 84, 1076-9
LA German
AB Column **chromatog.** of ultrafiltrated **serum** (substances <50,000 **daltons**) from patients with hepatic coma disclosed an elution peak not present in normal **serum.** Thin-layer **chromatog.** disclosed that this peak contained 5 middle-mol.-**wt. peptides.** This peak was largely eliminated by 3 h of hemoperfusion using activated charcoal as an adsorbant.

L37 ANSWER 539 OF 568 CA COPYRIGHT 2002 ACS
AN 85:155932 CA
TI Isolation of acidic glycopeptides from **urine** by means of anion-exchange resins. Application to some cases of glycosphingolipidosis or mucolipidosis
AU Calatroni, Alberto; Tira, M. Enrica
CS Fac. Sci., Univ. Pavia, Pavia, Italy
SO Clin. Chim. Acta (1976), 71(2), 137-41
AB An acidic fraction contg. amino sugars was isolated by means of Dowex 1 resin from normal human **urine** that had been filtered previously through Ecteola-cellulose. After purifn., the fraction was shown to be composed of **peptides** and carbohydrates in comparable amts. Threonine, serine, and dicarboxylic acids were the principal amino acids. The carbohydrate moiety was mainly composed of galactose and glucosamine (~3:1), together with smaller amts. of fucose, sialic acid, galactosamine, and mannose. The presence of an O-glycosidic bond to threonine was shown by alkali treatment in reducing conditions. The fraction is probably a mixt. of acidic glycopeptides. Fractions showing similar characteristics were isolated from the **urine** of patients with Niemann-Pick disease, Gaucher's disease, I-cell disease, and Ehlers-Danlos syndrome. Slight differences from the normal were found in the compn. of the fraction isolated from GM1-gangliosidosis type 1.

L37 ANSWER 549 OF 568 CA COPYRIGHT 2002 ACS
AN 84:101732 CA
TI A column **chromatography** fractionation of the hydroxyproline-containing urinary **peptides** with continuous automatic detection
AU Szymanowicz, A.; Malgras, A.; Cosson, R.; Randoux, A.; Borel, J. P.
CS Lab. Biochem., Fac. Med., Reims, Fr.
SO Ann. Biol. Clin. (Paris) (1975), 33(5), 351-8
AB Dialyzable and nondialyzable urinary hydroxyproline-contg. **peptides** were **chromatographed** on QAE-Sephadex and on phosphocellulose, resp. They were detected and quantitated by continuous hydrolysis in 3.3 N NaOH followed by oxidn. by chloramine-T and colorimetry with p-dimethylaminobenzaldehyde. The patterns of dialyzable urinary hydroxyproline **peptides** did not show significant qual. differences between normal subjects and patients suffering from Paget's bone disease or cancer metastases of bone. The patterns of the nondialyzable urinary **peptides** show more variability in the case of normal subjects and differ much more in the case of Paget's disease of bone.

L37 ANSWER 552 OF 568 CA COPYRIGHT 2002 ACS
AN 81:165703 CA
TI Urinary **protein** analysis with sodium dodecylsulfate polyacrylamide gel electrophoresis. Comparison with other analytical techniques
AU Balant, L.; Mulli, J. C.; Fabre, J.
CS Policlin. Univ. Med., Geneva, Switz.
SO Clin. Chim. Acta (1974), 54(1), 27-37
AB Sodium dodecyl sulfate acrylamide gel electrophoresis (SDS-AGE) seps. the **proteins** according to their mol. **wt.** (**MW**). It was carried out on the **urine** of 17 healthy control subjects and 92 ambulatory patients with suspected or known renal impairment. The SDS-AGE patterns were classified as physiol., low **MW** predominance, middle **MW** predominance, high **MW** predominance, or mixed low and high **MW**. Patients were sep. classified as having either normal kidneys or glomerular, tubular, or mixed renal lesions according to the results of clin. investigation. Comparison of both classifications revealed that SDS-AGE allowed a good forecast of the site of renal involvement. Predominantly low **MW protein** excretion correlated with tubular damage. Middle and high **MW** patterns correlated with glomerular disease. SDS-AGE was compared to **chromatog**. on Sephadex G-100, to acetate cellulose electrophoresis, immunoelectrophoresis, and electrophoresis in acrylamide without SDS. It was found tht SDS-AGE gave the most information that was in agreement with the patient's clin. status. SDS-AGE is recommended for routine use for clin. diagnosis.

L37 ANSWER 553 OF 568 CA COPYRIGHT 2002 ACS
AN 81:61631 CA
TI Activity of a myocardial depressant factor and associated lysosomal abnormalities in experimental cardiogenic shock
AU Okuda, Minoru; Yamada, Toshihiko; Hosono, Kiyoshi
CS Sch. Med., Juntendo Univ., Tokyo, Japan
SO Circ. Shock (1974), 1(1), 17-29
AB It was previously reported that a myocardial depressant factor (MDF) accumulates in **plasma** during various forms of circulatory shock. In the present study with dogs subjected to cardiogenic shock, MDF was isolated from the **plasma** on both gel filtration and ion-exchange **chromatog.**, and **detd.** under controlled **assay conditions**. MDF activities increased as cardiogenic shock progressed, reaching 30 units and 61 units at 3 and 5 hr after coronary embolization, resp. The pre-embolization control **plasma** contained no appreciable MDF activity. The cardiodepressant substance recovered from the shock **plasma** was apparently a small **peptide** with a mol.

wt. between 800 and 1000. The obsd. lysosomal abnormalities accompanied with ischemic cellular injury of the pancreas were consistent with the view that the site of MDF prodn. is the ischemic pancreas in which lysosomal activation is involved in the formation of MDF. The MDF accumulation in the systemic circulation during cardiogenic shock may contribute to the cardiac impairment and lethality of shock.

L37 ANSWER 555 OF 568 CA COPYRIGHT 2002 ACS
AN 78:40006 CA
TI Automated **chromatographic** system for the combined analysis of urinary **peptides** and amino acids
AU Klosse, J. A.; Huistra, D. Y.; De Bree, P. K.; Wadman, S. K.; Vliegenthart, J. F. G.
CS Wilhelmina Child. Hosp., Utrecht, Neth.
SO Clin. Chim. Acta (1972), 42(2), 409-22
AB An automated system for the combined anal. of urinary **peptides** and amino acids is presented. Column **chromatog**. sepn. is based partially on the Technicon amino acid anal. NC-1 method. The column eluate is divided into 2 parts, one for **peptide** anal. using the Folin-Lowry reaction; the other for amino acid anal. with ninhydrin. **Peptide** and amino acid peak patterns are registered simultaneously in the same **chromatogram**. Aspecific Folin-Lowry-pos. substances, such as phenols and phenolic acids, are removed by EtOAc extn. and macromols. with a mol. **wt**. above 15,000 by ultrafiltration. **Peptide** peaks are characterized by relating their position to the positions of the neighboring amino acids. The Folin-Lowry response/ninhydrin response of tyrosine serves as an internal std. for the color yield of the **peptide** peaks. The peak pattern of normal **urines** is discussed. Three small groups of patients with tyrosinosis, celiac disease, and bone **disorders** are also **analyzed**. Compared with the normals, the excretory patterns of the patients show several differences. Abnormal peptiduria can be thus distinguished and abnormal **peptide** fractions can be recognized, opening the way for isolation and characterization.

L37 ANSWER 564 OF 568 CA COPYRIGHT 2002 ACS
AN 67:19503 CA
TI Separation of urinary **peptides** containing hydroxyproline
AU Borel, Jacques P.; Caranjot, J. M.; Jayle, Max F.
CS Fac. Med., Reims, Fr.
SO Clin. Chim. Acta (1967), 16(3), 409-16
AB Free hydroxyproline (I), acid I-contg. **peptides** and alk. I-contg. **peptides** from human **urine** were sepd. by Dowex 1 **chromatog**. Peptidic fractions were hydrolyzed with 6.0N HCl, and hydroxyproline concn. evaluated in every fraction by a colorimetric procedure derived from Neuman and Logan's techniques. Total hydroxyproline was also measured. Dowex 1 **chromatog**. allowed removal of interfering material, principally urea, which gave an intense yellow color in the **conditions** of hydroxyproline **detn**. Results from 25 normal and 70 pathol. **urines** are given. Total hydroxyproline frequently rises, for instance in hyperthyroidism, hyperparathyroidism, Paget's disease, osteoporosis, and metastatic cancer of bone. Acidic I-contg. **peptides** are more specifically elevated in rheumatoid arthritis and Paget's disease; alk. I-contg. **peptides** specifically rise in the course of nephritis and in metastatic cancer of bone. The diagnostic value of this statistically significant elevation is discussed. 33 references.

L37 ANSWER 566 OF 568 CA COPYRIGHT 2002 ACS
AN 54:18197 CA
OREF 54:3679i,3680a-b
TI Chemical **symptomatology** of progressive muscular dystrophy

AU Konieczny, Leszek; Noworytko, Jadwiga; Sarnecka-Keller, Maria
CS Akad. Med., Krakow, Pol.
SO Polskie Arch. Med. Wewnetrznej (1958), 28, 1579-87
LA Unavailable
AB **Urine levels** of creatine, creatinine, total and α-amino N, and amino acids were markedly increased in 10 cases of progressive muscular dystrophy treated with injections of Ca adenosinetriphosphate. **Chromatographic** sepn. of urinary amino acids after adsorption of **proteins** and inorg. salts on Zeocarb 225 resin revealed arginine, threonine, proline, and 4 **peptides** characterized by the following Rf values (solvent BuOH-AcOH-H2O, 4:1:5) and isatin color reactions: 0.052, brown; 0.23, green; 0.24, green; 0.48, orange. The last 3 are rare in normal **urine**. A similar examn. of **serum** amino acids showed no abnormalities. Detn. of amine N was concluded to be not indicative of amino aciduria attending the **investigated disease**.

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